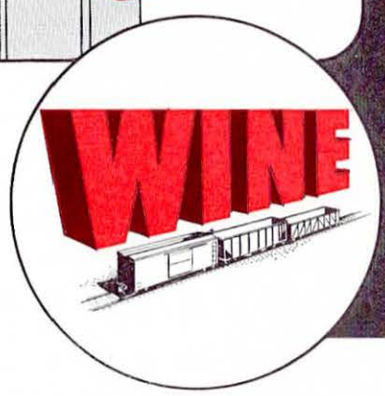
FOUNDED IN 1856

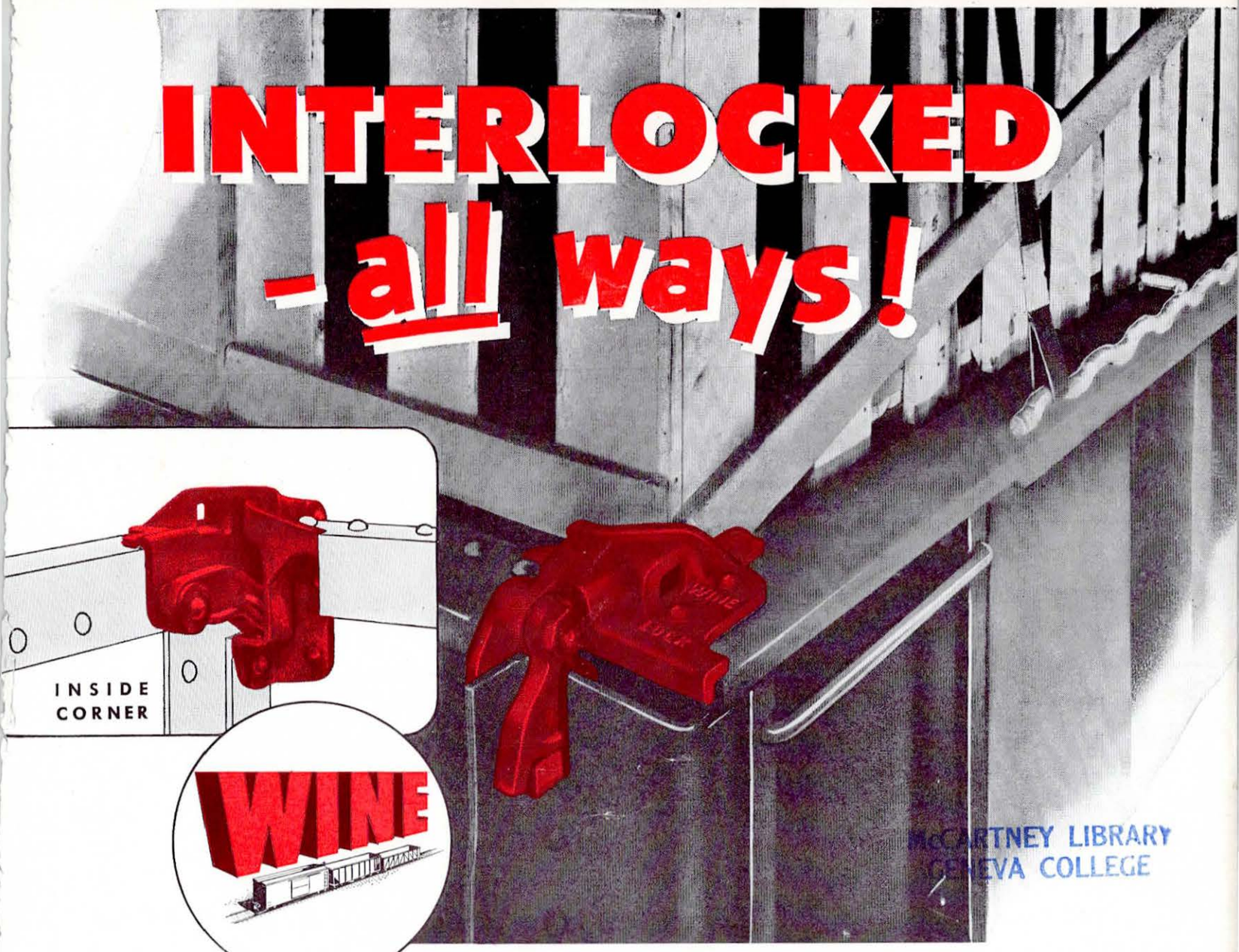
RAILWAY AGE

THE STANDARD RAILROAD WEEKLY FOR ALMOST A CENTURY

OCTOBER 15, 1951

INTERLOCKED - all ways!





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DROP END LOCKS

KEEP CORNERS FROM SPREADING • WON'T ACCIDENTLY OPEN

THE WINE RAILWAY APPLIANCE CO. TOLEDO 9, OHIO

B CONTINUED

BLISSERT. F. T. BAG CO. 606
BOGART. F. G. 1514
BOHLING. W. C. 1416
BOILER FEED SYSTEMS. INC. 1108
BOLLES. C. F. 1416
BOSCHEN. HENRY C. 1308
BOWER [illegible] 2314
BR[illegible] BUILDING OFFICES [illegible]
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[illegible]RIGHTO[illegible]
[illegible]EPAIR YARD 1917
[illegible]TOL. BERNARD [illegible] 715
BROOKWOOD SHAFT. INC. 1514
BRUKAKER TOOL CO. 1411
BROWN. PARK H. 515

BUFFALO BRAKE BEAM CO. 1509

BURKE. ADRIAN P. 1617
BURNS & HANCOCK FIRE BRICK & CLAY CO. 1206
BURNS & ROE. INC. 3RD FLOOR ENGINEERING CONSULTANTS
BUSCH. C. R. 1509
BUSH. B. P. 2019
BUTLER. H. A. 1317
BY-PRODS. RECOVERIES. INC. 2019

C

C A D CORPORATION OF AMERICA 1216
CAFFREY. G. H. 1109
CALOREX MFG. COMPANY [illegible] 810
CALVERT & [illegible]
[illegible] SYSTEMS [illegible]
CARBONE. W. E.
CARDONE. J. G.
CARVER COTTON GIN [illegible] 811
CASE. J. I. CO. 612-13
CASE. P. D. 1308
CASEY. J. S. 1608
CASEY. T. J. 1417
CASS MFG. CO. 506
CASTLE. J. C. 1809
CEDAR-WEST TOOL CO., INC. 1005
CENTRAL INTERNATIONAL. INC. 810
CENTRAM AGENCIES. INC. 1008
CENTRILINE CORPORATION 1210
CHANDLER. IRVING A. 1415
LIC. REAL ESTATE BROKER
CHES-DEL PICKLES 2208
CHESWOLD AGRICULTURAL SUPPLY CO. 2208
CHESWOLD CANNING CO. 2208
CHESWOLD COLD STORAGE CORP. 2208
CIAMPA. F. A. 410
CLANCY. A. J. 2206
CLARK COOPER COMPANY 813
CLARK. M. POWER 505
CLEMENTS MFG. CO. 506
CLE[illegible]

C CONTINUED

CORCORAN. J. A. 1703-4
COWAN. GEO. H. & CO. 2315
CREIGHTON. D. R. 1815
CRERAR. ADAMS & CO. [illegible]
CRONE. L. A. [illegible]09
CROSS [illegible]OD[illegible]IN &
[illegible] 506
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[illegible]OWLEY. H. M. 1308
[illegible]UMMINGS. A. E. 1308
CUNARD STATIONARY & PRINTING CO., INC. 202
CUNNINGHAM. J. G. 2008
CUSTER. A. 1008
CUSTER. W. COMPANY. INC. 1009

D

DAMES & MOORE 815
DARRAGH. A. D. & CO. 2315

DELAWARE LACKAWANNA WESTERN R.R.CO.. THE SEE NEXT SECTION

DELTA-STAR ELECTRIC CO. 1416
[illegible] J. J. & CO. 1101
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[illegible] W. G. 1906
DOYLE. H. F. 1714
D. P. COMPANY [illegible]

Congratulations Neighbor!

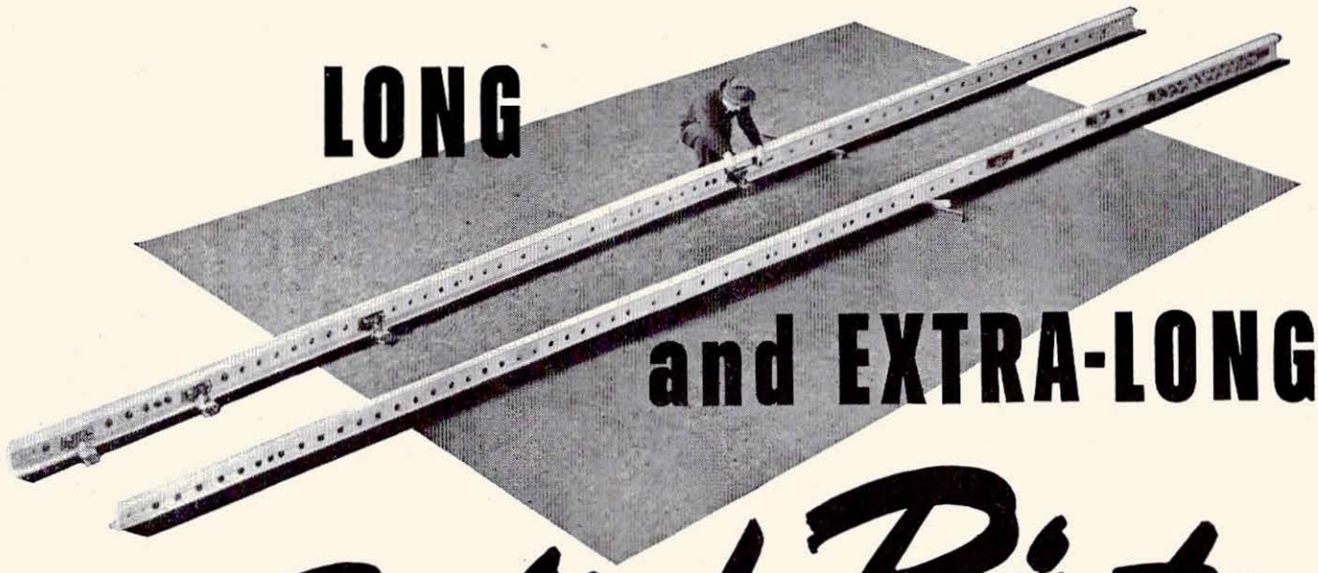
Our congratulations to the Lackawanna on this occasion implies something more than a mere gesture to a good customer of long standing who owns some 5310 freight cars equipped with our Unit Trucks.

We, here at Buffalo-Unit, cherish a kind of proprietary interest in the Lackawanna. Our brake beam plant is located in the western New York city which bears the same name as the railroad—we are friendly neighbors in the same office building in New York City.

For many years, Lackawanna's main line has been our accustomed highway for countless business trips between New York and Buffalo. Lackawanna's fine suburban service, unsurpassed anywhere we think, brings many of us to work in the morning and home again at night.

All in all, it's been a long and warmly satisfying association. So you see what we mean when we say, "Congratulations and Best Wishes, Neighbor. It's been nice knowing you."

BUFFALO BRAKE BEAM CO. **UNIT TRUCK CORPORATION**



LONG and EXTRA-LONG Switch Points

BETHLEHEM MAKES THEM ...HEAT-TREATS THEM TOO

Unusual facilities are needed for the making and heat-treating of long switch points, especially the supersized giants ranging to 45 ft. Bethlehem has such facilities—very fine ones. They are fully able to handle—and handle with ease—the longest points designed and used in this country today.

We call your particular attention to the heat-treating feature, for expert techniques have been evolved by Bethlehem metallurgists specializing in this field. The methods and equipment used were developed only after exhaustive research in the science of rail-steel chemistry—technical studies that have covered a period of many years.

While Bethlehem is well known for its work with long switch points, our shops naturally have full facilities for the handling of smaller units. Needless to say, every job, regardless of size, receives the most thorough attention to detail, the most careful and conscientious workmanship.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.
On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. *Export Distributor:* Bethlehem Steel Export Corporation

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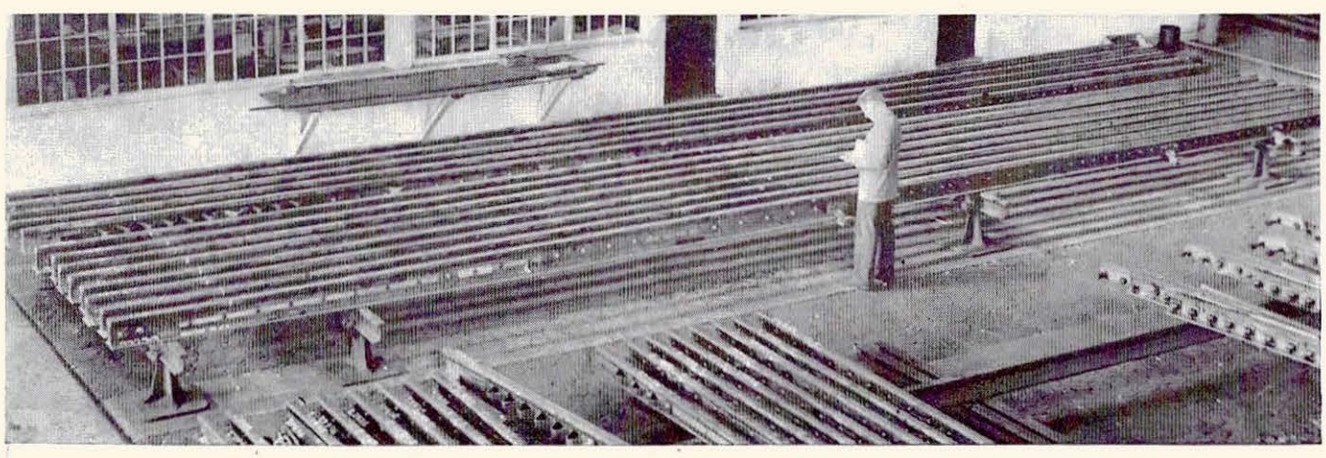
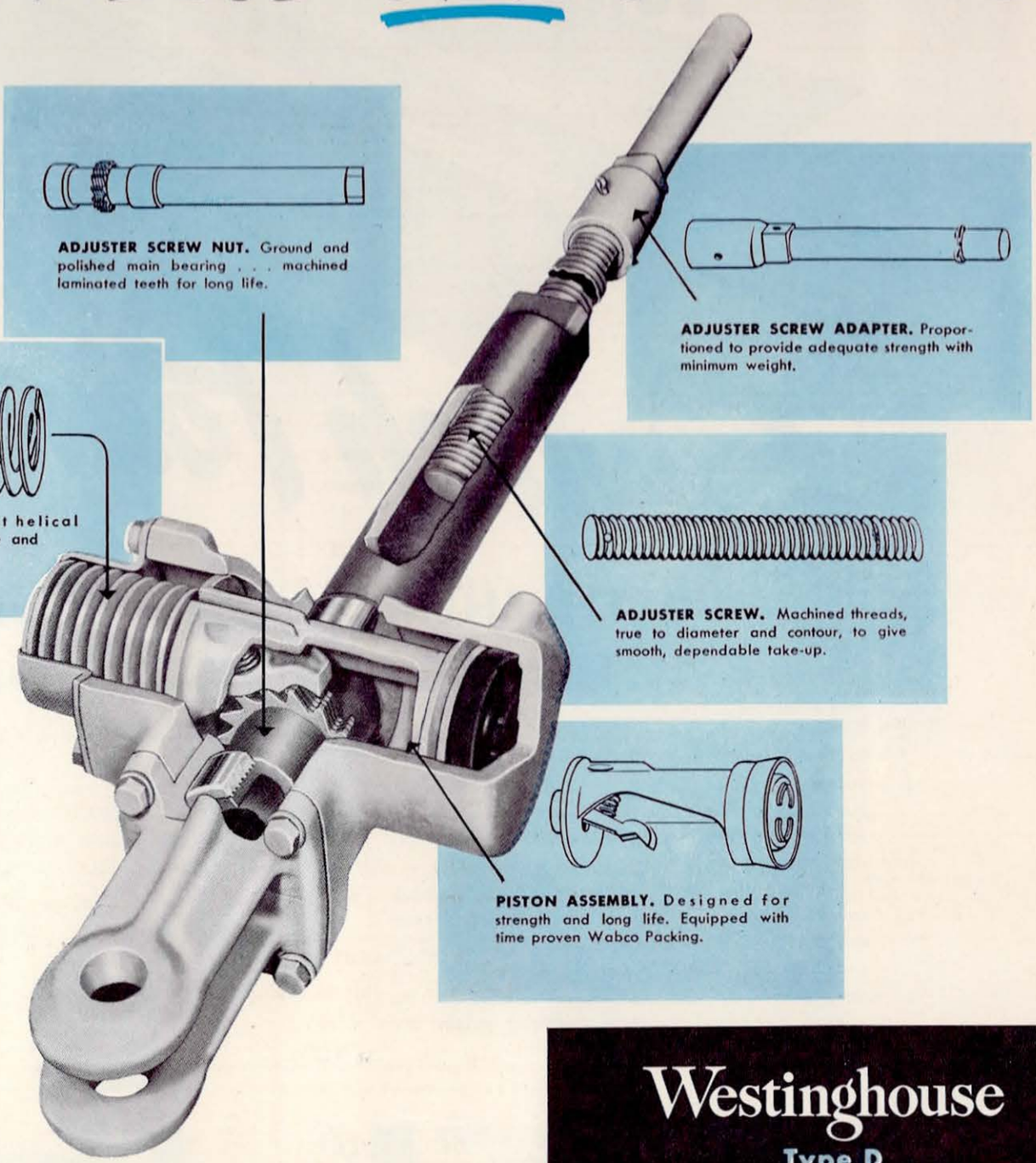


Here are the Reasons the Type "D"

DOES THE JOB—STAYS ON THE JOB



ADJUSTER SCREW NUT. Ground and polished main bearing . . . machined laminated teeth for long life.

ADJUSTER SCREW ADAPTER. Proportioned to provide adequate strength with minimum weight.

PISTON SPRING. Flat helical spring retains resilience and resists fatigue.

ADJUSTER SCREW. Machined threads, true to diameter and contour, to give smooth, dependable take-up.

PISTON ASSEMBLY. Designed for strength and long life. Equipped with time proven Wabco Packing.

Each of the simple, rugged operating parts in the Westinghouse Type "D" Slack Adjuster is designed to stand up under long, punishing service. The type "D" has the same fine engineering you find in Westinghouse Air Brakes . . . the same basic design principle that has been proved in many years of passenger service.

Westinghouse

Type D

Pneumatic-Automatic

SLACK ADJUSTER

for Freight Cars

Westinghouse Air Brake Co.

AIR BRAKE DIVISION

WILMERDING, PA.

Brakes are Basic to Railroad Progress

Vol. 131, No. 16 October 15, 1951

RAILWAY AGE

With which are incorporated the Railway Review, the Railroad Gazette, and the Railway-Age Gazette. Name Registered in U. S. Patent Office and Trade Mark Office in Canada.

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Railway Age Railway Mechanical & Electrical Engineer Railway Engineering & Maintenance
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CONGRATULATIONS

Lackawanna

on your 100th Anniversary

"Union" is proud of its many years association with the Delaware, Lackawanna and Western Railroad Company. As pioneer developers of many signal systems . . . we are well aware of the Lackawanna's constant alertness to new ways of improving its transportation facilities. And we are gratified that "Union" Signal Systems have helped this progressive railroad round out its first 100 years on a successful note . . . by affording it effective means for safely providing swifter, more efficient transportation.

We salute the Lackawanna for its many past achievements, and assure it that "Union" stands ready to help make the "next hundred years" even more successful.

UNION SWITCH & SIGNAL COMPANY

DIVISION OF WESTINGHOUSE AIR BRAKE COMPANY

SWISSVALE PENNSYLVANIA

NEW YORK CHICAGO ST. LOUIS SAN FRANCISCO

WEEK AT A GLANCE

CURRENT RAILWAY STATISTICS

Operating revenues, eight months
1951 ..... $ 6,762,632,765
1950 5,885,664,117

Operating expenses, eight months
1951 ..... $ 5,359,781,366
1950 4,559,522,971

Taxes, eight months
1951 ..... $ 752,009,833
1950 651,181,004

Net railway operating income, eight months
1951 ..... $ 513,636,133
1950 556,537,130

Net income, estimated, eight months
1951 ..... $ 326,000,000
1950 372,000,000

Average price railroad stocks
October 9, 1951 ..... 57.35
October 10, 1950 ..... 48.15

Car loadings, revenue freight
39 weeks, 1951 30,342,248
39 weeks, 1950 28,498,859

Average daily freight car surplus
Week ended October 6, 1951 2,252
Week ended October 7, 1950 2,267

Average daily freight car shortage
Week ended October 6, 1951 19,789
Week ended October 7, 1950 35,341

Freight cars delivered
September 1951 8,533
September 1950 5,131

Freight cars on order
October 1, 1951 140,135
October 1, 1950 106,611

Freight cars held for repairs
September 1, 1951 96,020
September 1, 1950 113,654

Net ton-miles per serviceable car per day
July 1951 (preliminary) 955
July 1950 969

Average number railroad employees
Mid-August 1951 1,295,941
Mid-August 1950 1,270,215

In This Issue . . .

A BOW TO THE LACKAWANNA: Today—October 15—marks the one-hundredth anniversary of operation of the first train over the Liggett's Gap Rail Road—corporate predecessor of the modern Delaware, Lackawanna & Western. In recognition of that event, the Lackawanna, past and present, is the subject of five of this issue's feature articles—a general review of the company's history on page 70; a look at the railroad as it is today on page 78; a survey of its modern freight handling and station mechanization policies on page 82; a study of its advanced engineering practices on page 86; and the story of development of its motive power on page 90. How the railroad itself will celebrate its hundredth birthday is told in the news.

MORE CONVENTIONS: With the fall convention season still in full swing, all of this issue's feature articles not devoted to the Lackawanna centennial are reports of conventions—the Associated Traffic Clubs on page 95; the Railway Tie Association on page 97; the American Short Line Railroad Association on page 101; and the A.A.R. Communications Section on page 104.

"END TO FAVORITISM"— of the automobile-using minority of New York City's commuters, and fair attention to the legitimate needs of the majority which must continue to use mass transportation facilities, was urged by Hudson & Manhattan President William Reid, in an October 9 address to New York's sixth Regional Plan Conference. Mr. Reid's talk is reported in the news, as are speeches at Miami by W. T. Faricy and at Boston by G. Metzman; the N. & W.'s announcement of a new yard at Norfolk; September freight-car deliveries of 8,533 units; and new orders for 3,730 cars and 24 locomotives.

In Washington . . .

ON THE CAPITAL SCENE: R.F.C. abolishes Railroad Division.—Minchin resigns as head of Railroad Transport Division of D.T.A.—N.M.B. suggests regional grouping of union shop negotiations.—Sutter joins Tariff Research Group.—I.C.C. authorizes higher passenger fares in south.

MORE OF THE SAME: Further proof, if any is needed, of the justice of the railroads' plea for higher rates is afforded by the eight-month figures summarized on page 65, and given in detail for individual roads on pages 46, 48, 50 and 52. With eight-months' gross

WEEK AT A GLANCE

revenues up from $5.9 billion to nearly $6.8 billion, N.R.O.I. was down from $556.5 million to $513.6 million; net from $372 million to $326 million. For August alone, the story was much the same. By the time September figures are in, Ex Parte 175 increases may make the picture a little brighter—but not bright enough!

. . . And Elsewhere

TRUCKERS WOOING RAILROADS? St. Louis-Chicago truckers apparently are interested in getting together with the railroads to discuss the possibilities of handling their loaded highway trailers by rail between those two important gateways. The truckers, faced with increased weight restrictions and more intensive policing of public highways—not to mention the spectre of a pending Illinois ton-mile tax—are evidencing considerable interest in use of flat cars for transporting their loaded trailers. The Chicago & Eastern Illinois, which already has a limited Chicago-St. Louis rail-trailer operation, is reported to be considering expanding it; and another road is said to be studying the possibility of offering a similar service between the two cities. The interest being shown by railroads such as the Santa Fe, the Chesapeake & Ohio, the Pennsylvania, the Rock Island, the Burlington, the Gulf, Mobile & Ohio and the smaller Detroit & Mackinac, would seem to indicate the subject is being given serious consideration by railroad management.

WILLIAM WHITE has been president of the hundred-year-old Delaware, Lackawanna & Western since January 1, 1941. A native of Midland Park, N. J., Mr. White is a graduate of the Erie's "Little Red Schoolhouse for Railroad Presidents"—he was general manager of that road's Eastern district, but came to the Lackawanna from the Virginian, where he was vice-president and general manager. As president of the Lackawanna he has met and successfully solved the problems of handling war-time traffic and of reducing the road's fixed charges by merging and dissolving a number of subsidiary companies (page 81). Mr. White is a director of the A.A.R. and chairman of the Railroad Panel of the Transportation Association of America's National Cooperative Project.

SIDELIGHT ON HISTORY: At the recent convention of the A.A.R. Communications Section (page 104), the Federal Radio & Telephone Corp. showed for the first time its new 20-minute color movie, "Railroad Operation with Microwave." It seems singularly appropriate to note that this picture was filmed along the Lackawanna, which has been the scene of early practical applications of at least three other notable advances in the field of communications (page 77).

WORDY, BUT ACCURATE: John L. Lewis recently let go at the "never-ending and unceasing stream of orders, rules, regulations, decrees, promulgations, amendments, interpretations, and declarations by . . . agencies and their manifold respective administrators, directors, chairmen and other official and unofficial spokesmen (that), in effect, virtually overwhelm and flood all industry, business and labor, large and small, with long, involved, technical, legalistic, complex, complicated, duplicitous, confusing and confounding rules and standards of conduct restricting, limiting, prohibiting, circumscribing and choking their otherwise normal and ordinarily successful and smooth operations."

HOW FAST IS FREIGHT SERVICE? A waybill study of quite a few thousand carloads, results of which were shown to us, indicates an average speed per loaded car of slightly less than 5 m.p.h. from the time cars left shippers' custody until delivered to consignees. The freight trains which handled these cars averaged almost 20 m.p.h., but initial and terminal switching and intermediate yard time took up almost 75 per cent of the hours the cars were in railroad custody. The friend who showed us this 5 m.p.h. figure suggested that regular compilations of this "rate of movement" be published by individual roads, as an incentive for some healthy inter-company competition in improved service, which would be helpful to the competitive position of the entire industry.

TEXACO *Salutes the D.L.&W. on its 100th Anniversary*

Delaware, Lackawanna & Western Railroad's birthday cake this year is bright with 100 candles. And The Texas Company is happy to congratulate this great railroad on its century of growth and progress.

Texaco and "The Route of Phoebe Snow" have been working together now for a good many years. We're proud that all Lackawanna freight cars are lubricated exclusively with *Texaco Texayce Oil* — the all-year car and engine oil that more than meets A.A.R. specifications, assuring more efficient operation, both summer and winter, bringing down maintenance costs. These are among the reasons why —

More railway cars and Diesel electric and steam locomotives in the U. S. are lubricated with Texaco than with any other brand.

You can share the benefits that Texaco brings to the leading railroads of America. There are Texaco Railroad Lubricants for every need, and the experience and know-how of Texaco Lubrication Engineers to help you bring down costs all along the line. Just call the nearest Railway Sales office listed, or write The Texas Company, *Railway Sales Division,* 135 East 42nd Street, New York 17.

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ATLANTA

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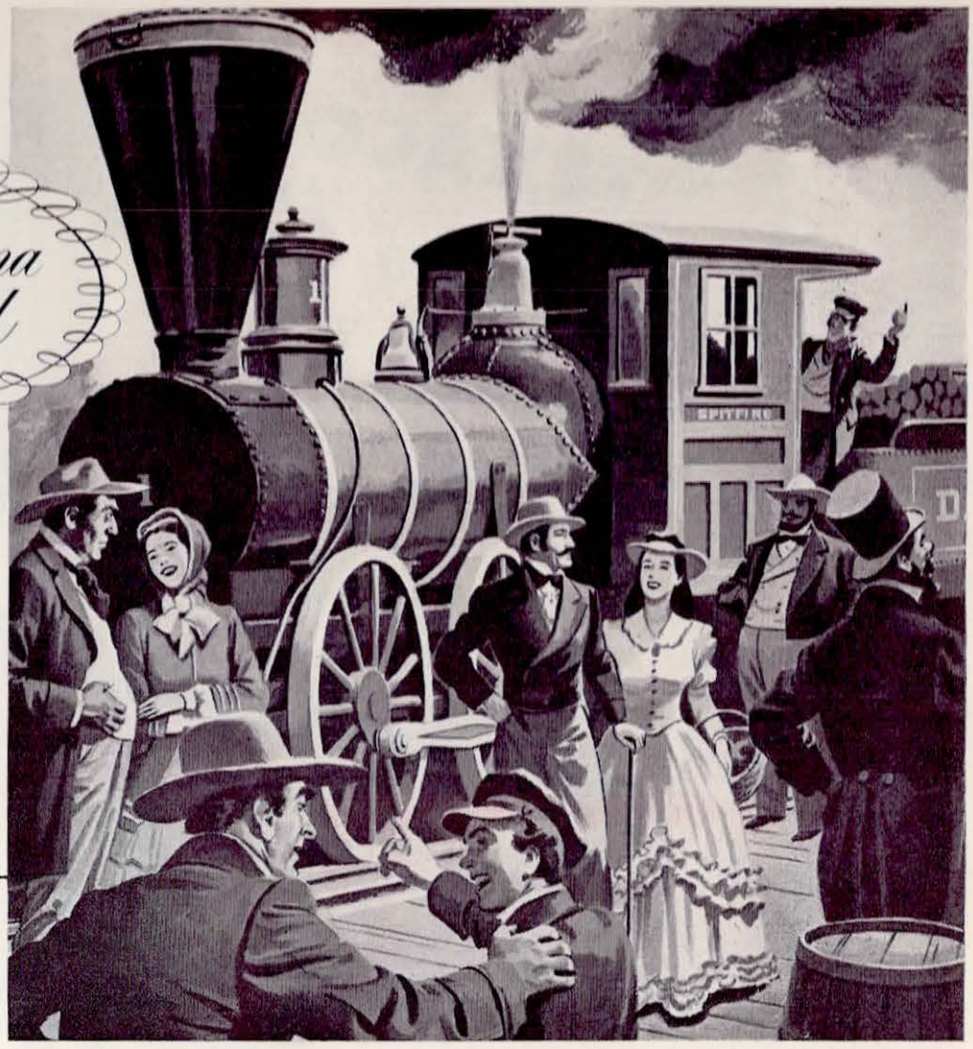
TEXACO Texayce Oil

ALL-YEAR CAR AND ENGINE OIL

TUNE IN . . . TEXACO STAR THEATER starring MILTON BERLE on television every Tuesday night. See newspaper for time and station.

1851
Lackawanna
Centennial
1951



Starting a second century

IT WAS a moment of great expectation, that day in October, 1851. The boiler of the little engine was fired up... there was a rush of steam... the plucky little train picked up speed and moved out of the station. A dramatic journey had started along the route that was later to be part of the Lackawanna Railroad.

From that modest beginning a century ago, the Lackawanna has grown with America. Over the years we have continuously expanded and improved our facilities, our equipment and our service to keep pace with the industrial

Lackawanna

of service and progress

growth of the communities we serve. Together we have prospered under a system of free enterprise and competition in which the unhampered efforts of individual freedom have best served the needs of the people.

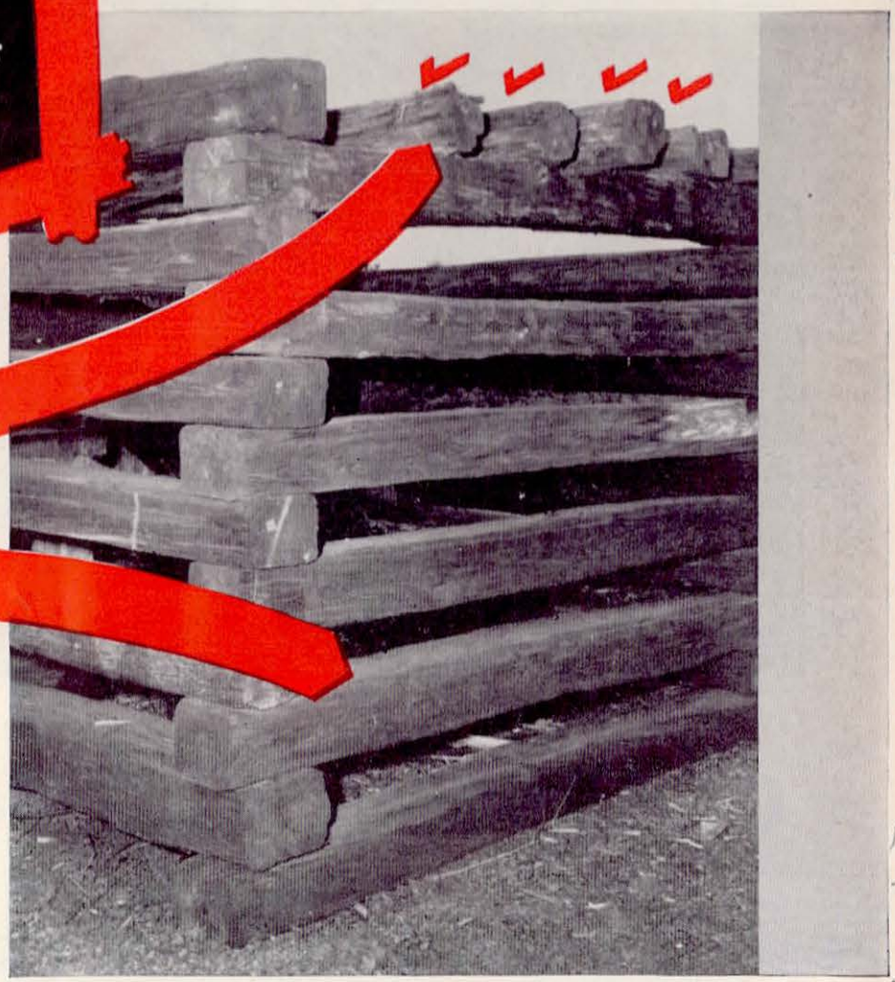
The Lackawanna's job is to provide safe, fast and dependable transportation of passengers and freight. We, the men and women of the Lackawanna, look back with pride to the accomplishments of the past. Now, as our railroad enters its second century, we pledge ourselves to provide even better transportation service in the years to come.

Railroad

THE ROUTE OF PHOEBE SNOW

HERE'S PROOF that AMCRECO big dividends maintenance

THE PROOF is in this test crib which has been exposed to the weather for over 39 years!



- **These four ties were not treated**
- **The balance of these ties were treated by the AMCRECO LOWRY PROCESS**

The Amcreco Lowry Process Creosoted Cross Ties shown in the recent photograph at the right were taken from the first charge of ties treated for the New York Central Railroad and cribbed together in 1911 at the Amcreco plant in Rome, N. Y. Four untreated heart longleaf pine ties—then considered to be the longest lived ties available—were laid on top as indicated by the checks. The treated ties are still in perfect condition; the untreated ties failed long ago.

THE exacting demands of modern railroading with heavier loads, greater traffic and higher speeds make the economies of Amcreco Lowry Process Treatment more obvious than ever before. Amcreco treatment is a vital contribution to lower operating costs, greater safety and forest conservation.

The tie renewal record of the Delaware, Lackawanna and Western Railroad shown on the opposite page is typical of the economies that can be effected through the use of Amcreco Lowry Process Treatment.

The extensive facilities and experience of the Amcreco organization are available to all railroads and we urge you to take advantage of them. Your inquiries are invited.

AMERICAN CREOSOTING COMPANY
INCORPORATED

COLONIAL CREOSOTING COMPANY INCORPORATED

AMCRECO LOWRY PROCESS CREOSOTED WOOD

GEORGIA CREOSOTING COMPANY INCORPORATED

Lowry Process pays in reduced expense

THE chart above dramatically illustrates the benefits secured by the Delaware, Lackawanna and Western Railroad after instituting a program of preservative treatment of its cross ties. Note how rapidly the tie replacement curve drops off after 1915 as more and more untreated ties were replaced with Amcreco-treated ties.

Previous to treatment, annual tie replacement averaged over 250 per mile of track. Since the Amcreco program was put into effect, replacements have been reduced to an average of less than 100 per year per mile of track—and this in the face of far heavier loads, heavier traffic and higher speeds . . . Proof of the economy of Amcreco Treatment.

CROSS TIES
BRIDGE TIES
AMCRECO CREOSOTED PRODUCTS
Pressure Treated by the Lowry Process for strength that lasts!
PILES
TIMBERS

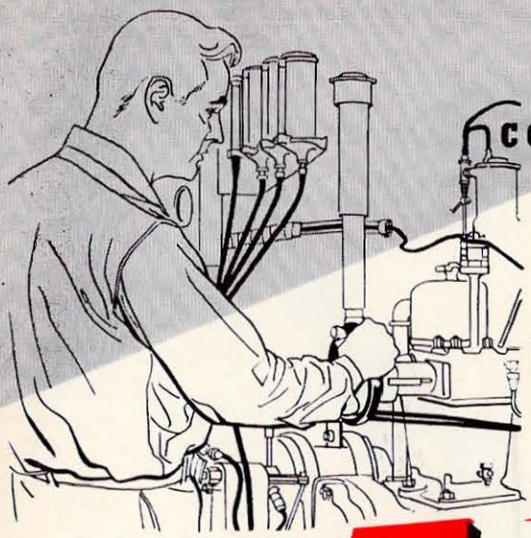
It won't run a temperature when it's HARRISON COOLED

The majority of Diesel locomotives built today are equipped with Harrison radiators and oil coolers. Effective jacket-water cooling and the maintenance of oil temperatures within the required range are assured. Harrison cooling helps *minimize* the number and the cost of overhauls . . . it is an important factor in cutting the *roundhouse* time and raising the *availability* time of Diesel locomotives.

HARRISON

DIESEL RADIATORS AND OIL COOLERS

HARRISON RADIATOR DIVISION, GENERAL MOTORS CORPORATION, LOCKPORT, N. Y.



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laboratory control

to assure efficient, economical operation

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special

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fuels and lubricants

Ashland's modern refinery methods include a complete chain of laboratory checks and controls to maintain a constant balance of product. Once you have selected the correct type of diesel fuel best suited to your specific engine and application, you can depend on Ashland to keep you supplied with absolutely uniform products.

Complete control in the refinery permits Ashland to offer a number of types of diesel fuels, one of which will meet or exceed the rigid specifications required by your engine manufacturer. Stability, cleanliness, fluidity and ignition performance have been improved, along with better lubrication of fuel pumps and injectors, greater power output and a reduction in exhaust smoke.

Specify Ashland Diesel Fuels and lubricants and enjoy the efficient, trouble-free operation that modern, controlled refining can bring you. Contact our nearest office or write for an experienced engineer to call and discuss your specific requirements.

...complete line of lubricants for diesel equipment

ASHLAND OIL & REFINING COMPANY

ASHLAND, KENTUCKY

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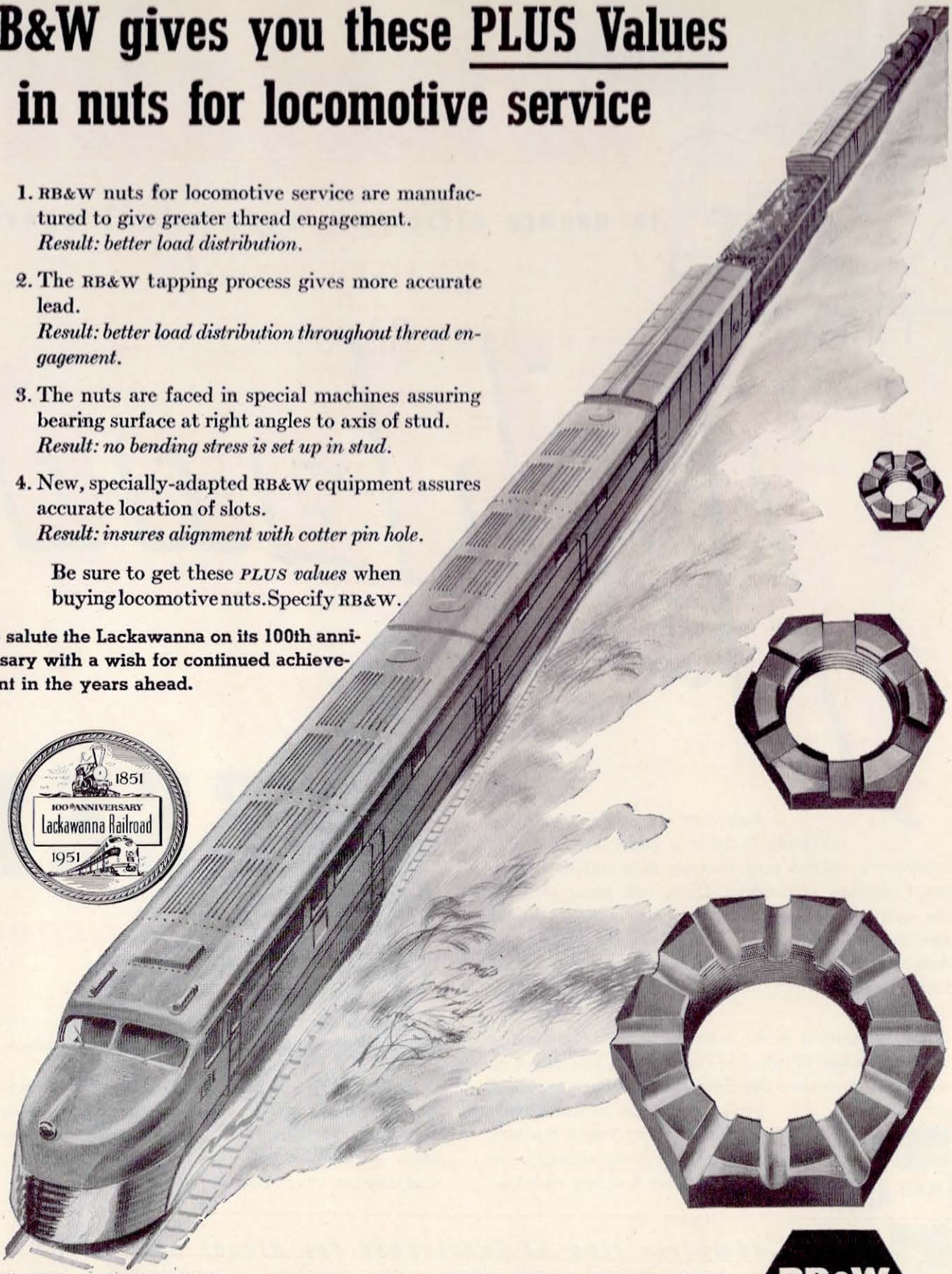
1. RB&W nuts for locomotive service are manufactured to give greater thread engagement.
   Result: better load distribution.
2. The RB&W tapping process gives more accurate lead.
   Result: better load distribution throughout thread engagement.
3. The nuts are faced in special machines assuring bearing surface at right angles to axis of stud.
   Result: no bending stress is set up in stud.
4. New, specially-adapted RB&W equipment assures accurate location of slots.
   Result: insures alignment with cotter pin hole.

Be sure to get these *PLUS values* when buying locomotive nuts. Specify RB&W.

We salute the Lackawanna on its 100th anniversary with a wish for continued achievement in the years ahead.

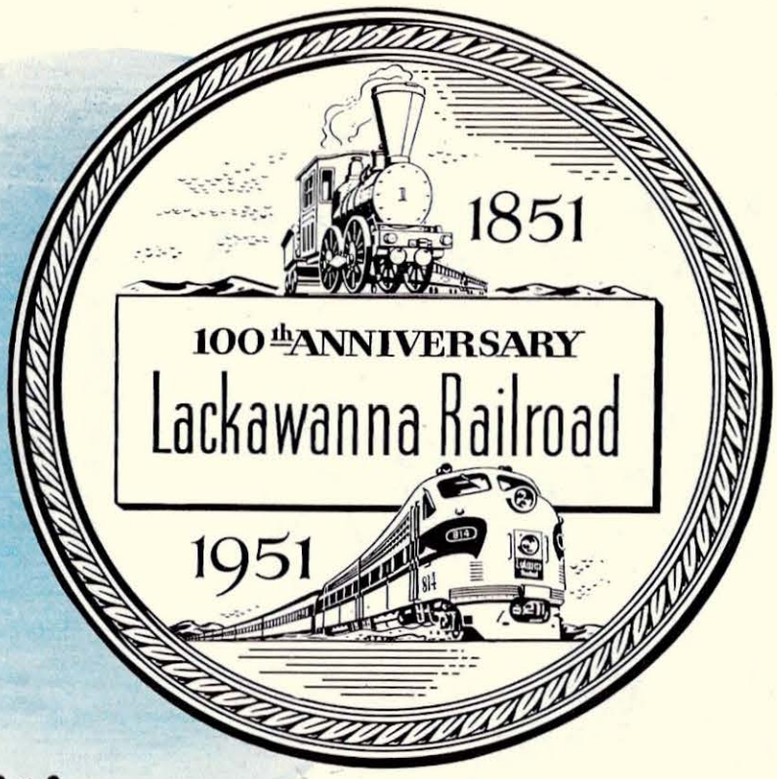


RUSSELL, BURDSALL & WARD BOLT AND NUT COMPANY

Plants at: Port Chester, N. Y., Coraopolis, Pa., Rock Falls, Ill., Los Angeles, Calif. Additional sales offices at: Philadelphia, Detroit, Chicago, Chattanooga, Dallas, Oakland. Sales agents at: Portland, Seattle.

RB&W
THE COMPLETE QUALITY LINE

106 YEARS MAKING STRONG THE THINGS THAT MAKE AMERICA STRONG



In recognition of fine services to the public

. . . *among them*

DIXIE CUPS

Yes, it takes an unqualified record of fine service to reach a centennial anniversary. Dixie Cup is proud to be represented among those services.

Like other Lackawanna services, there are none finer than Dixie Cups. Dixies are made to the most exacting standards. Dixies are sturdy, firm, pleasant to the touch—to the lips.

When you offer your passengers Dixie Cups, you offer drinking water service at it's best.

SPECIAL DESIGNS to your order!

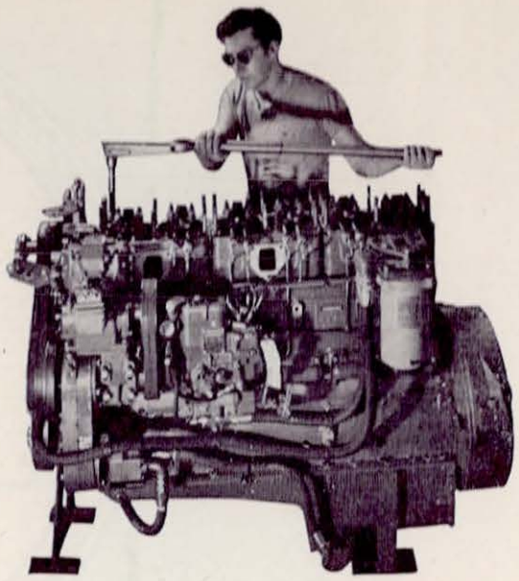
For regular water service, or snack service that includes both hot and cold beverages, you can get Dixie Cups printed in your own design or trademark.

DIXIE CUP

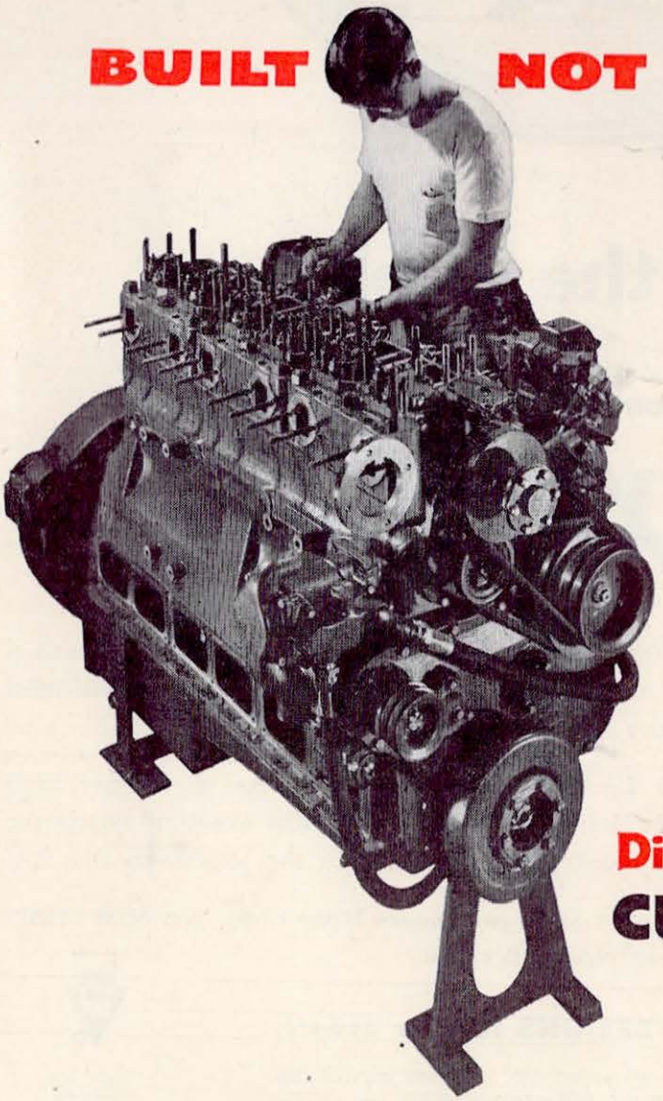
"Dixie" is a registered trademark of the Dixie Cup Company

DIXIE CUP COMPANY, Easton, Pa., Chicago, Ill., Darlington, S. C., Ft. Smith, Ark., Brampton, Canada

Cummins®
CUSTOM BUILT
Diesels



BUILT NOT ONCE BUT TWICE



Each rugged, lightweight *and* high-speed Cummins Diesel is actually built *twice.* It's assembled, run-in tested, disassembled . . . inspected . . . then reassembled and tested again. And each engine is custom-built *to fit the job. Extra* care in building, Cummins exclusive fuel system, efficient service and parts organization, enable users to get *less* "down-time", *more* power and profits from Cummins Diesels. *See your Cummins Dealer.*

Diesel power by CUMMINS

CUMMINS Dependable DIESEL

CUMMINS ENGINE COMPANY, INC., COLUMBUS, INDIANA

Export: CUMMINS DIESEL EXPORT CORPORATION • Columbus, Indiana, U.S.A. • Cable: CUMDIEX

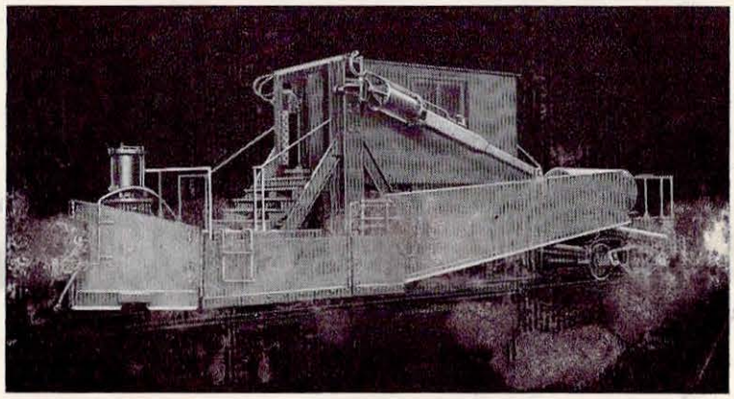
Lightweight High-speed Diesel Engines (50-550 hp)
for: on-highway trucks
off-highway trucks • buses
tractors • earthmovers
shovels • cranes
industrial locomotives
air compressors
logging yarders and loaders
drilling rigs
centrifugal pumps
generator sets and power units
work boats and pleasure craft

3 GOOD ANSWERS——

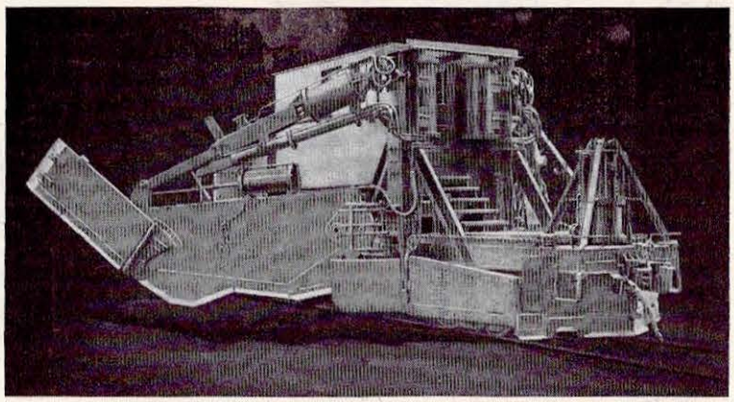
TO ROADBED MAINTENANCE PROBLEMS

The complete Jordan spreader-ditcher-snow plow line offers you a year-around solution to every roadbed maintenance and snow romoval problem: ballast plowing, roadbed shaping, ditch cutting, fill spreading, bank widening, shoulder dressing, ice cutting and track flanging.

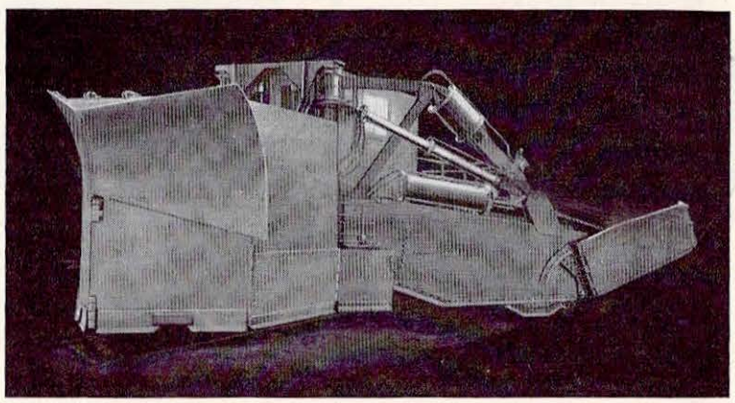
Plan to watch a Jordan in action and you'll see why so many railroad men say "It does the work of an army of men."



SPREADERS——



DITCHERS——



SNOW PLOWS—

O. F. JORDAN COMPANY

WALTER J. RILEY, *Chairman of the Board*

EAST CHICAGO, INDIANA

A RAIL-TEL *Pioneer*

One of the original Rail-Tel Propane Switch Heater installations was made on the Lackawanna in 1947. Photo above shows Rail-Tel in action at Denville, N. J. during the severe storm of December 26, 1947.

Today, Rail-Tel Propane Switch Heaters are used by many railroads throughout the country for economical and dependable protection of both isolated switches and all types of interlocking plants. These modern heaters, whether operated by manual or remote control, assure complete protection at all times and under all conditions.

THE RAILS COMPANY

NEW HAVEN, CONN. HOBOKEN, N. J. ST. LOUIS, MO. CHICAGO, ILL.

3 GOOD ANSWERS—

TO ROADBED MAINTENANCE PROBLEMS

The complete Jordan spreader-ditcher-snow plow line offers you a year-around solution to every roadbed maintenance and snow romoval problem: ballast plowing, roadbed shaping, ditch cutting, fill spreading, bank widening, shoulder dressing, ice cutting and track flanging.

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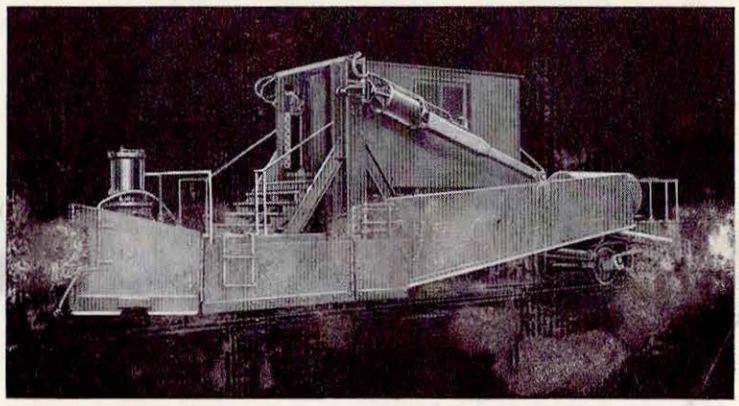

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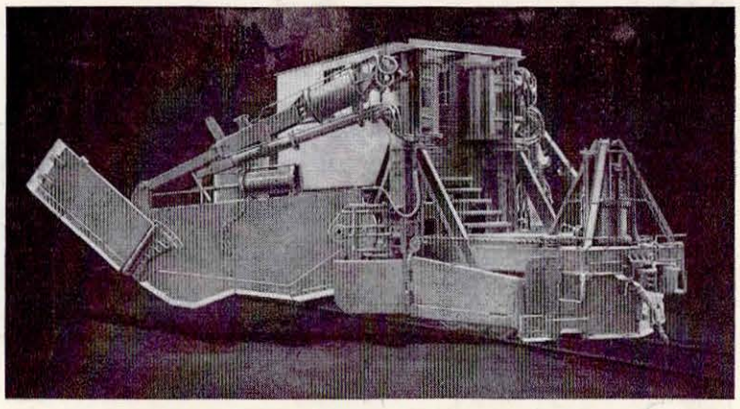
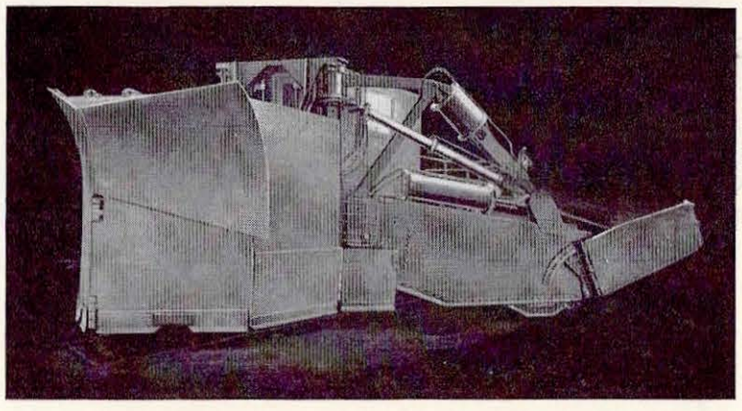


DITCHERS—



SNOW PLOWS—

O. F. JORDAN COMPANY

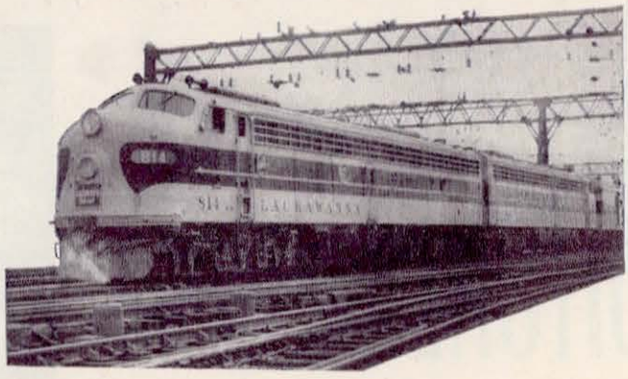
WALTER J. RILEY, *Chairman of the Board*

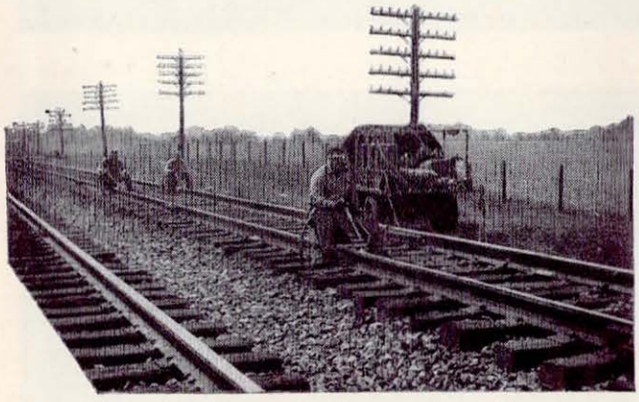
EAST CHICAGO, INDIANA

One Hundred Years

And still no fears
That Phoebe Snow's
Dress would have smears.
For cloth of white
Is still all right
Along the Road
Of Anthracite.

Nor is she dead
Named in her stead
A diesel rides
O'er a smoothed bed.
We're glad to say
The part we play
Is all along
Our Phoebe's way.





Building up rail*
So it won't fail,
Helps make it last
And costs curtail.
Rail doesn't "bow"
It just won't "go"
Along the route
Of Phoebe Snow.

*Building up rail ends and driver burns are two important operations the Lackawanna has worked out with OXWELD.

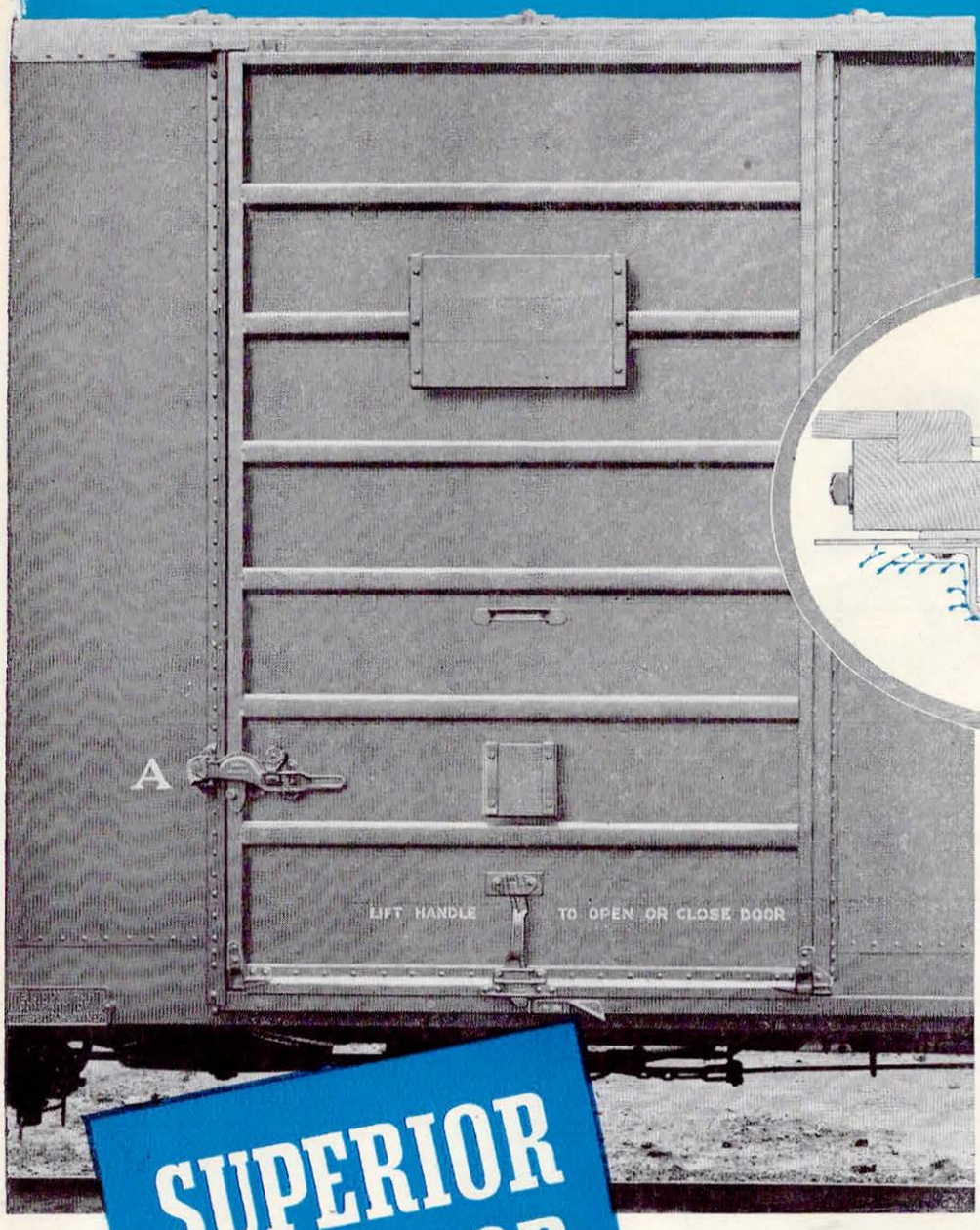
OXWELD RAILROAD SERVICE

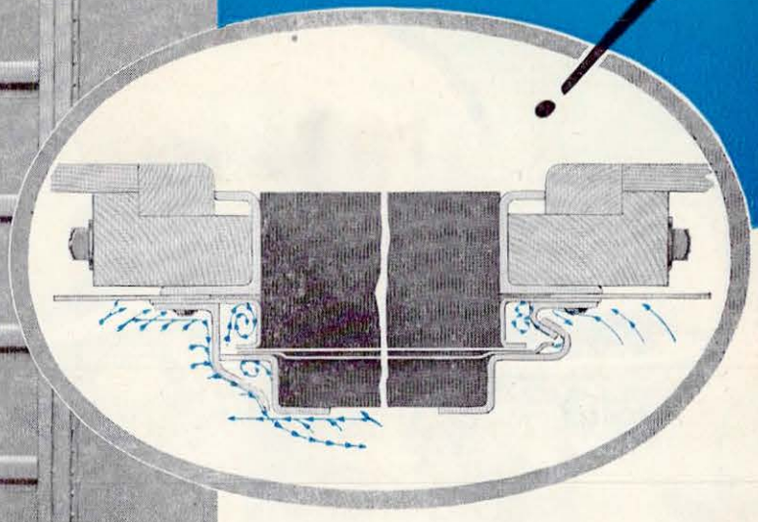
OXWELD RAILROAD SERVICE COMPANY
A Division of Union Carbide and Carbon Corporation
UCC
Carbide and Carbon Building Chicago and New York
In Canada:
Canadian Railroad Service Company, Limited, Toronto

SINCE 1912—THE COMPLETE OXY-ACETYLENE SERVICE FOR AMERICAN RAILROADS

LADING PROTECTED

by these weatherproof barriers





"Centennial congratulations to the DL&W, a user of Superior Doors & Fixtures."

SUPERIOR CAR DOOR

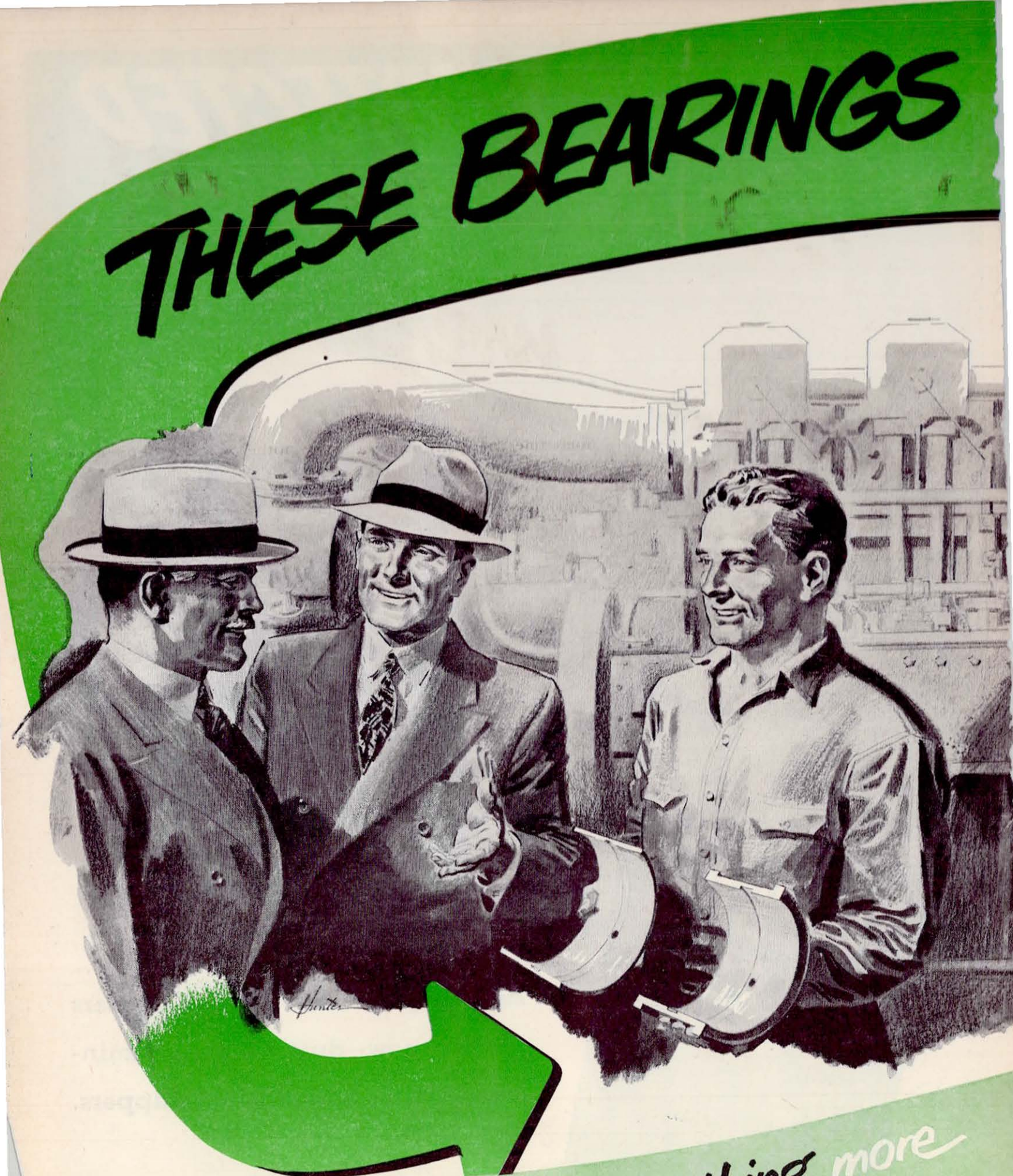
- RIGID CONSTRUCTION
- LIGHT WEIGHT
- LONG LIFE
- TIGHTLY SEALED
- FREE ROLLING
- NO SLAMMING

Lading protected against cinders—rain—snow—dust . . means diminished claims and satisfied shippers.

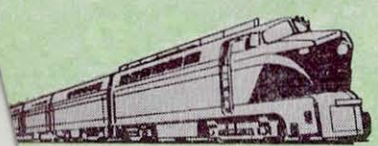
SUPERIOR CAR DOOR CO.

McCORMICK BUILDING, CHICAGO

THESE BEARINGS

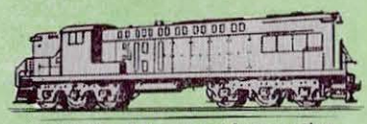


"You're GETTING something more



6400-HP. Road Locomotive
Four 1600-HP. Units

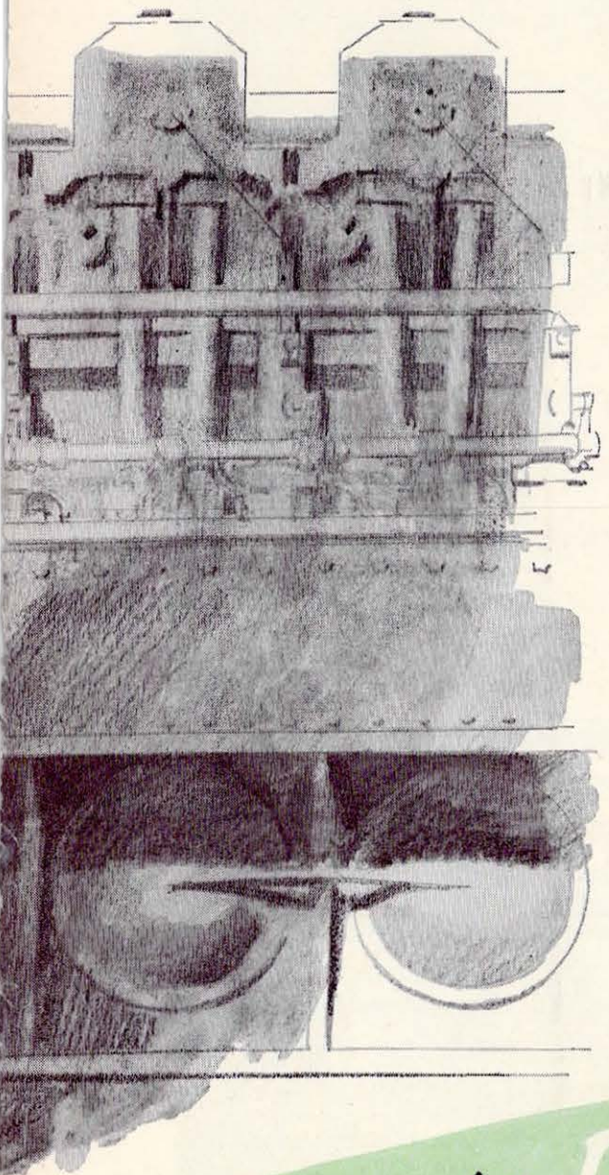
1600-HP. All-service Locomotive
Six Traction Motors



1600-HP. All-service Locomotive
Four Traction Motors

1600-HP.
All-service Locomotive

are trained down to fighting weight



Sometimes necessity isn't just the mother of invention—it can also be the mother of improvement!

The extra power output of B-L-H diesels demanded heavier crankshaft bearings. Design considerations made it desirable to retain the previous bearing housing dimensions. So B-L-H engineers turned to a new, thinner precision bearing which has proved highly successful in service.

The increase in size reduced the unit bearing load. New design facilitated removal and replacement. Retention of the more expensive copper-lead facing added life. Bearings are made by strip method, following the best automotive practice, which assures higher, more uniform physical properties. High precision eliminates hand fitting, scraping and shimming.

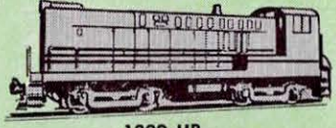
This pioneering adds another reason for the extra performance margin of Baldwin-Westinghouse Diesel-Electric Locomotives . . . a margin that means more profitable operation for you.

BALDWIN-LIMA-HAMILTON CORPORATION

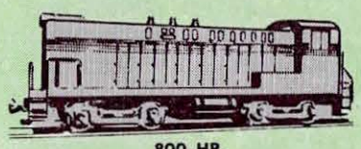
Philadelphia 42, Pa. Offices in Principal Cities

because we're DOING something more"

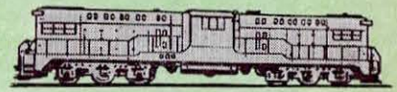
1200-HP.
Road Switching Locomotive



1200-HP.
Switching Locomotive



800-HP.
Switching Locomotive



2400-HP. Road
Transfer Locomotive

BALDWIN · BLH · LIMA-HAMILTON

BALDWIN-Westinghouse

WESTINGHOUSE · W

DIESEL-ELECTRIC LOCOMOTIVES

A RAIL-TEL *Pioneer*

One of the original Rail-Tel Propane Switch Heater installations was made on the Lackawanna in 1947. Photo above shows Rail-Tel in action at Denville, N. J. during the severe storm of December 26, 1947.

Today, Rail-Tel Propane Switch Heaters are used by many railroads throughout the country for economical and dependable protection of both isolated switches and all types of interlocking plants. These modern heaters, whether operated by manual or remote control, assure complete protection at all times and under all conditions.

THE RAILS COMPANY

NEW HAVEN, CONN. HOBOKEN, N. J. ST. LOUIS, MO. CHICAGO, ILL.

Lackawanna Railroad

We salute you on your outstanding contribution of progress and service during the past century and extend hearty good wishes for your continued success in the years ahead.

1851 100 YEARS 1951

W. H. MINER, INC. CHICAGO

THE BIG 89% PROVES SUPERIORITY OF YALE ELECTRIC TRUCKS

89% of the Yale Electric Trucks sold today are bought by previous users . . . so satisfied with Yale performance and Yale economy that Yale is their choice again.

THESE USERS had ample opportunity to make every on-the-job test—to compare Yale Electric Trucks with any others—to get dollars-and-cents proof of how Yale saves man-hours, steps up production, speeds all materials handling jobs.

These users found Yale Electric Trucks pay for themselves faster...then go on giving many years of service... taking the toughest jobs right in stride.

If you're not already among the users of Yale Electric Trucks, be guided by the Big 89% and this proven record of satisfaction. Ask your Yale Representative to show you the actual performance records which persuade Yale users to buy Yale Electric Trucks again and again.

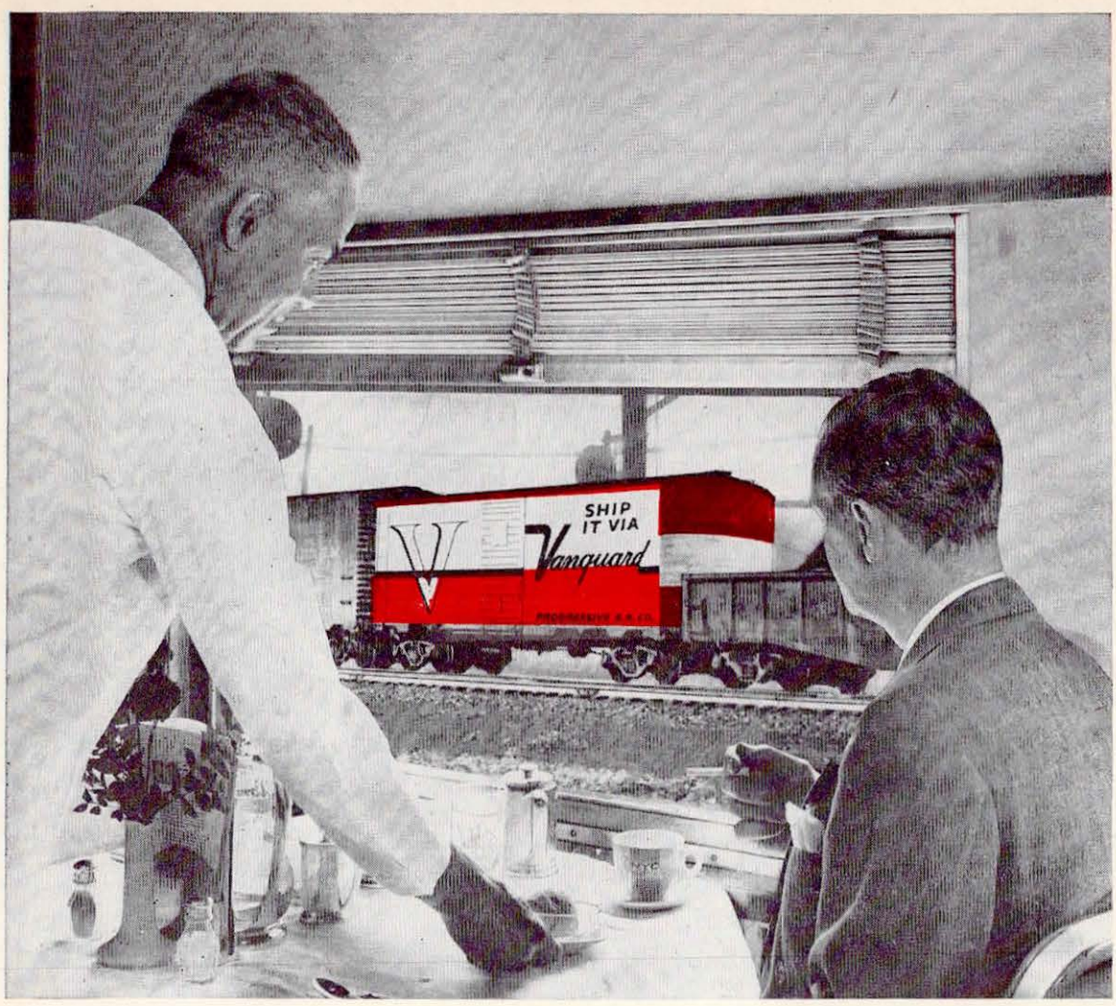
YALE & TOWNE

The Yale & Towne Manufacturing Co., Philadelphia 15, Pa.

YALE is a registered trade mark of The Yale & Towne Manufacturing Co.

Yale & Towne congratulates the ***Lackawanna Railroad*** *for outstanding service to the nation over the past 100 years*

YALE GAS AND ELECTRIC INDUSTRIAL TRUCKS • YALE *WORKSAVERS* • YALE HAND TRUCKS • YALE HAND AND ELECTRIC HOISTS



Do your cars impress the men who make decisions?

It's easy to see why smartly finished freight cars attract the attention of high-level executives—many of whom are your best shipping prospects.

Readily identified and easily remembered, well-groomed cars impress shippers and the general public alike . . . reflect your line's sound, progressive management. And you'll find that in many sections of the country your rolling stock is your chief means of keeping the line's name before the people.

Today an ever-increasing number of railroad men are giving their freight equipment new appeal with Du Pont DULUX Railroad Finishes. They find that a DULUX finish gives years of service . . . retains its high gloss for months despite weathering, smoke, cinders and hard knocks . . . helps keep maintenance costs down.

DULUX comes in many distinctive colors—colors that will help sell your line to new prospects . . . and improve your public relations, too. E. I. du Pont de Nemours & Co. (Inc.), Finishes Div., Wilmington 98, Delaware.

85% of America's leading railways* use DUCO lacquer or DULUX enamel on passenger-train equipment

. . . conclusive proof that the nation's railroads depend on the exceptional qualities of Du Pont DUCO and DULUX Railroad Finishes: outstanding durability and sparkling beauty with a minimum of maintenance.

Includes Class 1 lines operating 100 or more passenger-train cars.

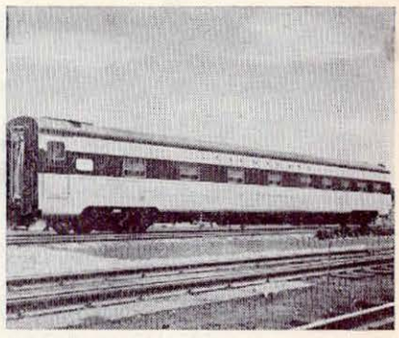
DU PONT
REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING
. . . THROUGH CHEMISTRY

DUCO · DULUX
REG. U. S. PAT. OFF. REG. U. S. PAT. OFF.
Railroad Finishes

Finish Facts from DU PONT

Lackawanna— now marking century of service— finishes new equipment with DULUX



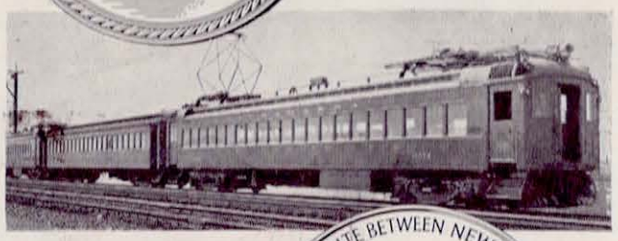
Celebrating a centennial anniversary this year, Lackawanna proudly announces the addition of spanking-new equipment, like this trim sleeping car, the Tioughnioga. It is part of a crack streamliner, the Phoebe Snow, mainlining from the Atlantic Seaboard to the Niagara frontier at Buffalo.

The Lackawanna uses durable Du Pont DULUX railroad finishes to protect new equipment and help maintain its original good looks over the years. DULUX can be counted on to take repeated scrubbings without losing its original high gloss.

This giant new Diesel locomotive is smartly finished in DULUX gray, maroon and yellow colors made with specially selected pigments resistant to fading. Du Pont finishes bond securely to steel and galvanized surfaces and hold up under the blast action of roadbeds.

Small wonder that Lackawanna and other top-flight railroads choose DULUX Railroad Finishes. Du Pont DULUX assures durability, lasting beauty and maximum protection—a combination of "eye-appeal" and long-term economy that railroaders know they can depend on.

HYATT *Congratulates* LACKAWANNA



Sixty-year-old Hyatt congratulates the hundred-year-old Lackawanna Railroad on its notable progress.

The first Lackawanna suburban cars equipped with Hyatt Roller Bearings started operating in 1926. Later came steam drawn, Hyatt-equipped, main line passenger cars.

And now, Lackawanna diesels, Hyatt-equipped, of course, and modern cars of the Phoebe Snow roll with Hyatt Roller Bearing Journal Boxes.

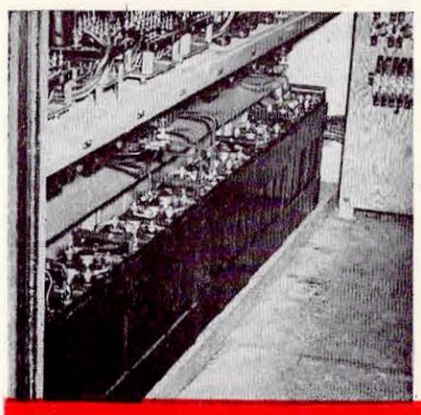
Hyatt designers, engineers, and craftsmen all contribute to supplying modern railroads with Hyatt Journal Boxes. Hyatt Bearings Division, General Motors Corporation, Harrison, N. J.

HYATT ROLLER BEARING JOURNAL BOXES

October 15, 1951 marks the actual 100th Anniversary of the Lackawanna Railroad, since it was on the same date in 1851 that operation of the first train occurred on the Ligget's Gap Railroad—the first link in the system.

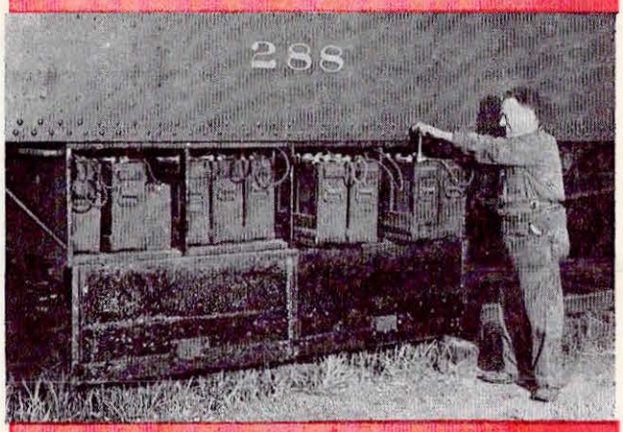
Today, the Lackawanna is a major trunkline running between Hoboken, New Jersey and Buffalo, New York. In addition, the company operates 596 miles of branch lines in New Jersey, New York and Pennsylvania.

Our company is proud to have assisted the Lackawanna in its early application of electric power to installations of automatic signals, highway crossing protection and other signaling functions, and, more recently, to lighting and air-conditioning of passenger cars and control circuits on multiple-unit cars.

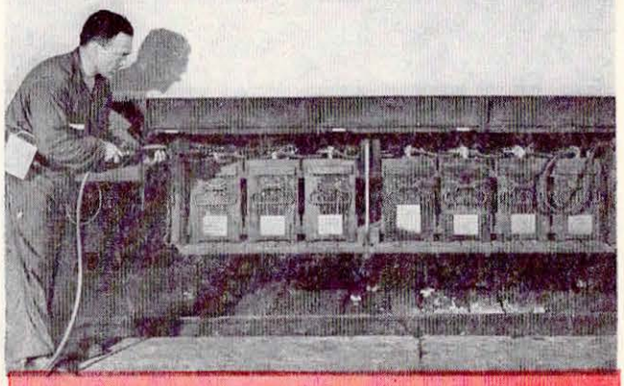


The operating battery for the Lackawanna's automatic highway crossing gate installation at Netcong, N. J. which comprises 6 gates and 38 flashing lights.

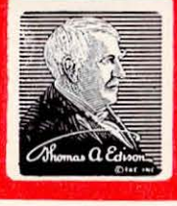
A 9-cell set of type A6H Edison Storage Batteries operates these automatic gates at entrance to an historic covered bridge spanning the Delaware River at Portland, Pa.



A 25-cell A8HW carlighting battery which went into service in 1929. It is shown here in a coach which is to be scrapped after which the battery will be reapplied.



One of two parallel sets of 25-cell A16H carlighting and air-conditioning batteries as installed on modern, streamlined cars such as are assigned to Phoebe Snow.



THOMAS A. EDISON, INCORPORATED

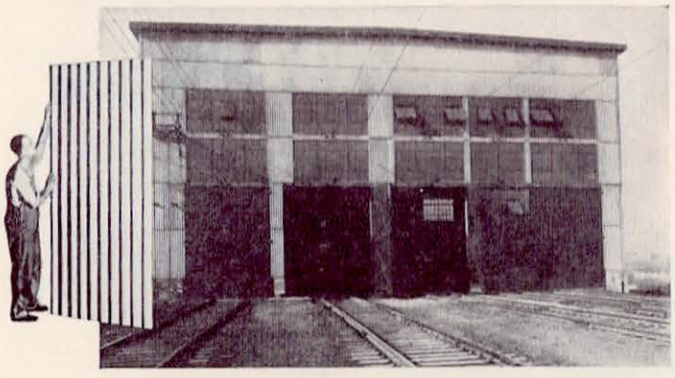
Storage Battery Division
WEST ORANGE, N. J.

Primary Battery Division
BLOOMFIELD, N. J.

...and many *"happy returns"* in reduced maintenance from these Johns-Manville products

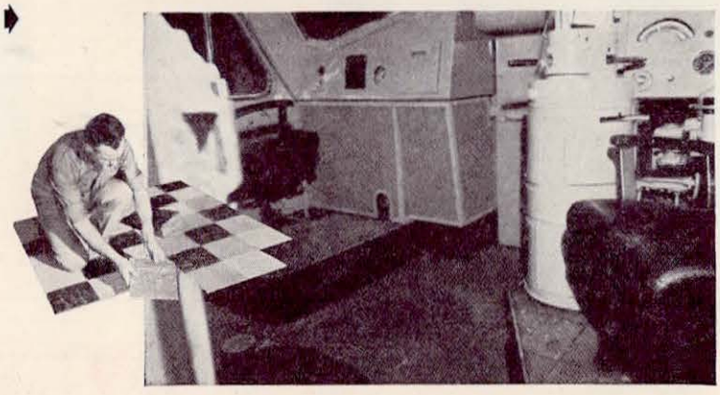
J-M CORRUGATED TRANSITE

The Lackawanna shop shown at the right was built with J-M Corrugated Transite* over 20 years ago . . . and is still in service today. Asbestos-cement Corrugated Transite defies fire, weather, and corrosive fumes. It is virtually maintenance-free . . . never requires painting. The large sheets cover large areas quickly, are easy to cut or drill, and are readily fastened to steel or wood framing.



J-M TERRAFLEX FLOORING

In installations such as the Diesel cab pictured at the right, this modern vinyl plastic-asbestos floor tile is bringing the Lackawanna important economies in reduced flooring maintenance. Highly resistant to abrasion and wear, it is also unaffected by greases, oil, alkalis and mild acids. Its unusual flexibility and resilience not only make it comfortable under foot, but are a decided advantage in preventing "lifting" due to working of the floor.



• • •

Corrugated Transite and Terraflex are just two of the Johns-Manville products that are helping to bring "many happy returns" to the Lackawanna on its 100th Anniversary.

*Reg. U. S. Pat. Off.

JOHNS-MANVILLE JM PRODUCTS

Johns-Manville

93 YEARS OF SERVICE TO TRANSPORTATION

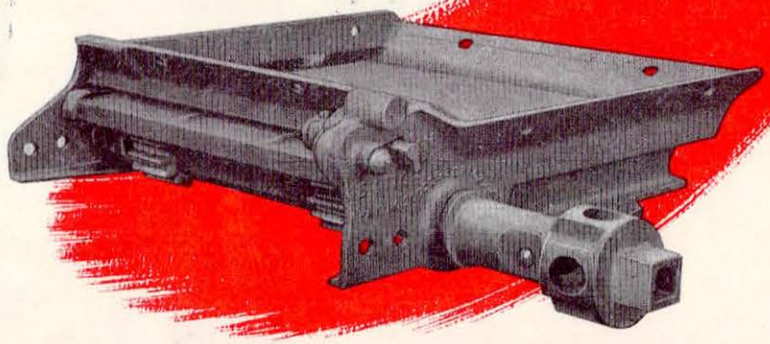
All Lackawanna Covered Hopper Cars
Are Equipped with Enterprise Outlets

Our Congratulations to

Lackawanna Railroad

THE ROUTE OF *PHOEBE SNOW*

ON ITS CENTENNIAL ANNIVERSARY



Enterprise Outlet
for Covered Hopper Cars

DOOR OPERATING DEVICES EXCLUSIVELY SINCE 1903

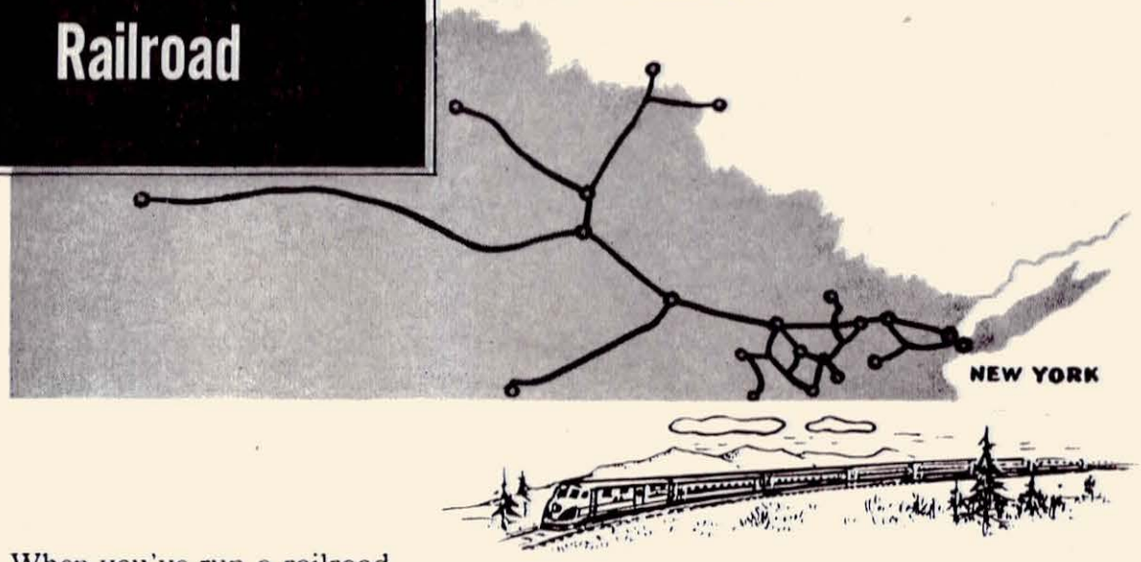
ENTERPRISE RAILWAY EQUIPMENT COMPANY

59 East Van Buren Street • Chicago 5, Illinois

100 Years of Railroading

Lackawanna Railroad

Specifies
SKF TRACTION MOTOR BEARINGS



When you've run a railroad for a hundred years like The Delaware, Lackawanna and Western Railroad Company, you've acquired a lot of railroading experience—for which there just isn't any substitute. Over these years the Lackawanna has learned the need for positive, uninterrupted service on all Diesel Power. To insure traction motor service, SKF is specified on all traction motor armatures. For the Lackawanna's next hundred years, Good Luck! 7292

SKF
BALL AND ROLLER BEARINGS

8 REASONS WHY SKF IS PREFERRED BY ALL INDUSTRY

integrity • craftsmanship • metallurgy
tolerance control • surface finish
product uniformity • engineering service
field service

SKF INDUSTRIES, INC., PHILADELPHIA 32, PA.— *manufacturers of* SKF *and* HESS-BRIGHT *bearings.*

Standard

Congratulations...

Lackawanna

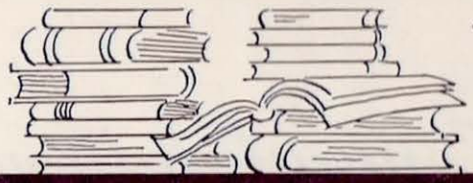
...To President William White,
his officers and organization,
on the celebration of the
One Hundredth Birthday
of the Lackawanna Railroad.

Standard
RAILWAY EQUIPMENT MANUFACTURING COMPANY
310 SOUTH MICHIGAN AVENUE, CHICAGO 4 • 247 PARK AVENUE, NEW YORK
HOBART BUILDING, SAN FRANCISCO • FIRST NATIONAL BANK BUILDING, ST. PAUL
THE WORLD'S LARGEST FABRICATOR OF RAILWAY CAR SPECIALTIES

USERS OF ASPHALT • ASBESTOS • MAGNESIA PRODUCTS

stop hunting

for specifications to match products —and vice versa!...



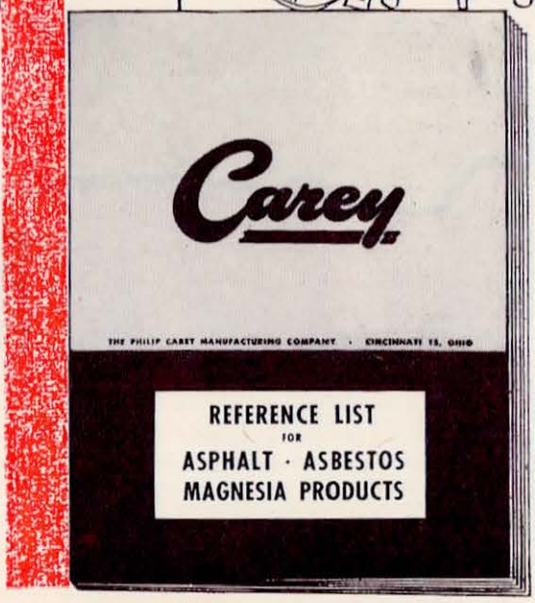
Find the information you need in this new CAREY manual —listing asphalt, asbestos and magnesia products and specifications!

This manual will quickly show you what products fit a particular specification—and vice versa . . . help you select alternates for scarce materials. It's complete! Among specifications included are Army, Navy, MIL, Federal, ASTM. Developed for the busy industrial designer, engineer, purchasing or maintenance executive or architect, you can count on it to save you hours every day, help speed production for defense. A copy is yours without obligation. Just ask your Carey Industrial Sales Engineer—or fill in coupon and mail today.

A Good Man to Know—

Your Carey Industrial Sales Engineer

His training and experience make him your valuable ally in the solution of problems in building construction and maintenance—manufacturing and process operations. Call him in to show you how Carey products can help you get the job done, *faster*—for less!



The Philip Carey Mfg. Company
Lockland, Cincinnati 15, Ohio
Department RA-10
Gentlemen: Please rush me my free copy of the Carey Reference Manual for Asphalt, Asbestos and Magnesia Products.

NAME.....

COMPANY.....

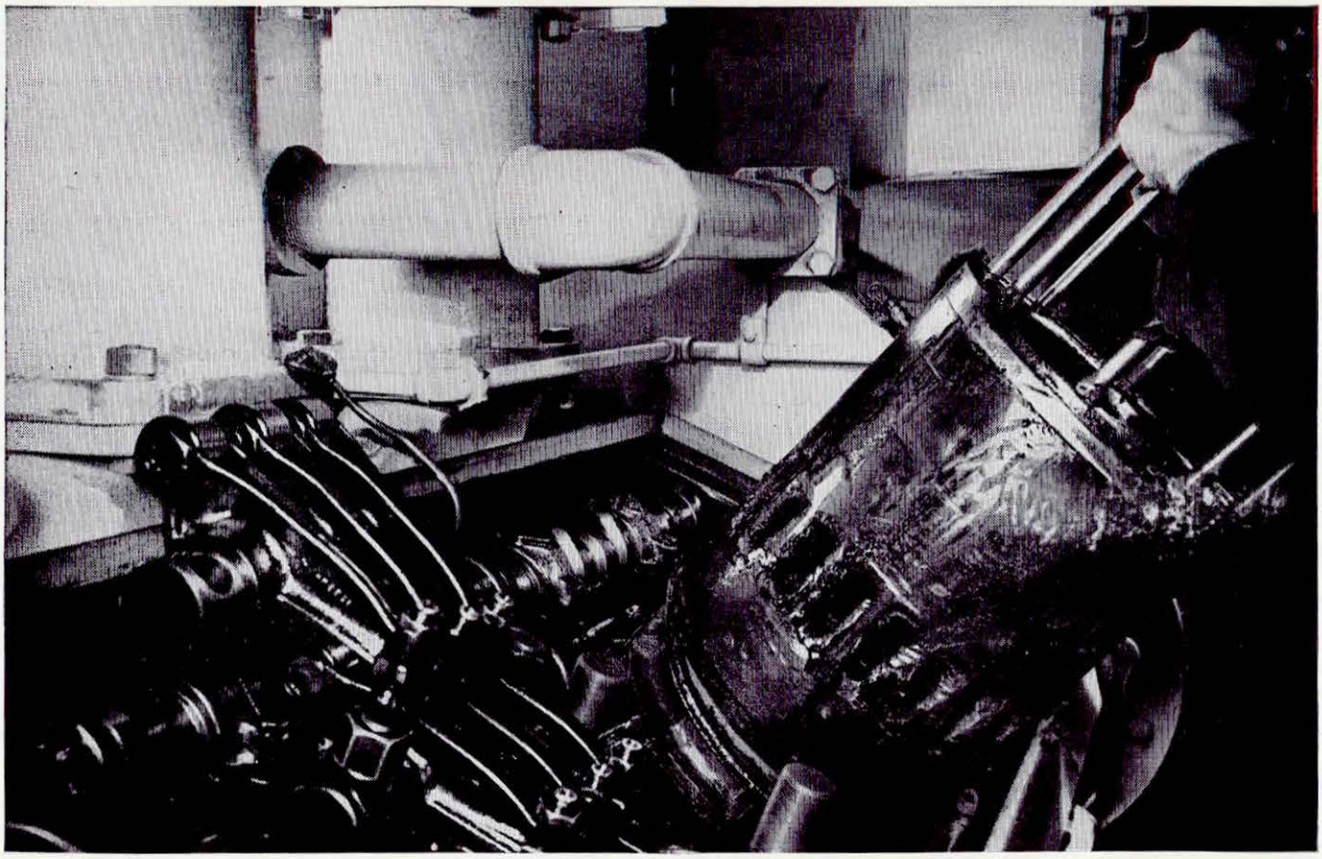
ADDRESS.....

CITY..... STATE.....

Carey

The Philip Carey Mfg. Co., Lockland, Cincinnati 15, Ohio
In Canada: The Philip Carey Co., Ltd., 277 Duke St., Montreal 3, P.Q.

ASPHALT • ASBESTOS • MAGNESIA PRODUCTS



When There's No Time For Down Time...

IT'S TIME FOR ALLOY STEELS

● With stepped-up schedules causing extra strain and extra wear, Diesel working parts need to be extra strong, extra wear-resistant to keep equipment rolling. Alloy steels are the answer to these needs.

Republic Alloy Steels are exceptionally high in strength and toughness. They withstand severe shock, strain, vibration and sudden reversal of stress. They respond uniformly to heat treatment and produce hard, wear-resisting surfaces. Gears, wrist-pins, connecting rods, crankshafts, valve springs, bearings and other mechanical parts give longer uninterrupted service when they are made of alloy steels.

Republic Metallurgists are ready to give you prompt, helpful assistance in properly applying alloy steels to your specific needs. Use their services—and alloy steels—to keep your vitally needed equipment rolling with less down time.

REPUBLIC STEEL CORPORATION
Alloy Steel Division • Massillon, Ohio
GENERAL OFFICES • • CLEVELAND 1, OHIO
Export Department: Chrysler Building, New York 17, New York

Republic ALLOY STEELS

REPUBLIC STEEL

Other Republic Products include Stainless, High Strength and Carbon Steels—Sheets—Plates—Pipe—Bolts, Nuts and Rivets—Boiler Tubes

FLEXIBLE MOTIVE POWER

SPEEDS FREIGHT ON THE DL&W

North of Binghamton on the busy Lackawanna, just ten Alco-GE 1600-hp road switchers have dieselized all freight traffic to Syracuse and Utica.

Solid coal and other trains northbound, merchandise freight southbound, seven-day-a-week heavy tonnage trains in both directions—all assignments are handled with ease by these powerful, all-purpose locomotives. In addition, they take in their stride extra work such as passenger, freight and maintenance-of-way work trains.

'Round-the-clock utilization of modern motive power—as demonstrated by these versatile Alco-GE locomotives—is just one of many progressive steps taken by the Lackawanna as it embarks upon its 2nd century. All play an essential role in helping the DL&W to *win traffic back to the rails—and keep it!*

Alco GE

AMERICAN LOCOMOTIVE and GENERAL ELECTRIC

113-273

S1998
ACKAWANNA
906

To the Lackawanna

1851
100th ANNIVERSARY
Lackawanna Railroad
1951

CONGRATULATIONS

on

100

Progress-Filled Years!

THE RAIL JOINT COMPANY Inc.

50 CHURCH ST. NEW YORK 7, N. Y.

WHEREVER YOU USE WOOD..

IN FRESH WATER, many preservatives leach out of wood. BARRETT* Coal-Tar Creosote resists this leaching action. Being only negligibly soluble in water, it is the preferred preservative for use on submerged wood structures, or those exposed to the powerful action of rapidly flowing water.

IN THE NORTH, poles must resist the tremendous weight of frequent sleet storms. Avoid preservatives which *weaken* the wood. BARRETT Coal-Tar Creosote allows poles to retain their maximum strength, and helps to keep the poles at their best and hold the lines aloft.

IN THE SOUTH, prolonged high temperatures cause light-bodied preservatives to leach and evaporate from the wood, thus exposing the wood to termite attack and decay. BARRETT Coal-Tar Creosote, heavier bodied and of lower volatility, prevents this condition. It stays in the wood longer under all conditions—doesn't "run out" on the job.

IN THE DESERT, crossties broom, shatter and split from extreme dryness and heat. Solutions made with BARRETT Coal-Tar Creosote retard this, and also reduce mechanical wear of crossties through their lubricating action on the wood fibers. In poles, heavy treatment with BARRETT Coal-Tar Creosote substantially reduces checking and splitting.

IN THE SWAMPS, forces of decay are almost at their maximum of destructive power. High moisture content and infection from other decaying wood and debris are ever-present menaces. Poles properly treated with Coal-Tar Creosote have survived under swamp conditions for years.

IN SALT WATER, marine wood-borers give a preservative its severest test. Of hundreds of preservatives that have been tried through the years, *Coal-Tar* Creosote is the only one that has proved consistently effective against teredos, limnoria and other salt-water enemies of wood.

THE BARRETT DIVISION
ALLIED CHEMICAL & DYE CORPORATION
40 Rector Street, New York 6, N. Y.

Use Barrett* →

*Reg. U. S. Pat. Off.

Only coal-tar creosote wood preservative has been used long enough and widely enough to have proved its effectiveness under all conditions.

COAL TAR CREOSOTE

A safer ride for Phoebe Snow

DEVOID OF FEAR
WITH CROSSINGS CLEAR

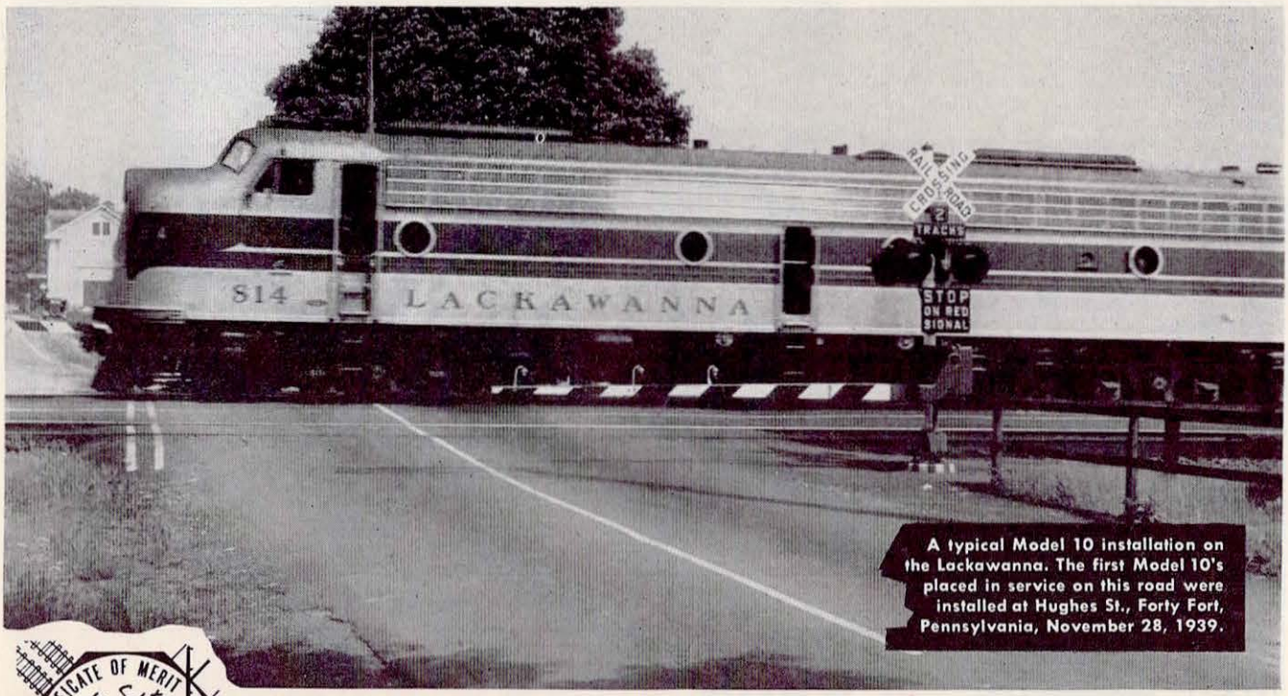
...thanks to

MODEL 10
Automatic
SIGNALS

The fabulous Phoebe rides again. And this time her safety on the Lackawanna is assured by Model 10 Automatic Signals, the last word in grade crossing protection.

As makers of famous Model 10's*, we of the Western Railroad Supply Company congratulate management and personnel of the Lackawanna Railroad on their first century of service to the nation. May Phoebe Snow and her fellow travelers ride forever "devoid of fear" with crossings clear . . . protected by Model 10's.

*Pat. in the U. S. A. and in Canada



A typical Model 10 installation on the Lackawanna. The first Model 10's placed in service on this road were installed at Hughes St., Forty Fort, Pennsylvania, November 28, 1939.

CERTIFICATE OF MERIT for Safety AWARDED WESTERN RAILROAD SUPPLY CO. BY THE NEW YORK MUSEUM OF SCIENCE AND INDUSTRY

WESTERN RAILROAD SUPPLY COMPANY

General Offices and Factory:
2428 SOUTH ASHLAND AVENUE • CHICAGO 8, ILLINOIS

Congratulations

Lackawanna Railroad

on your

ONE HUNDREDTH

Anniversary

Edgewater Steel Company

PITTSBURGH, PA.

D RAFT GEARS

L OCOMOTIVE TIRES

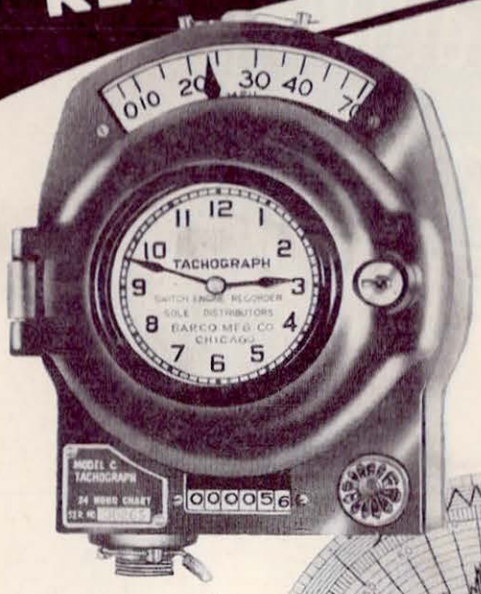
and

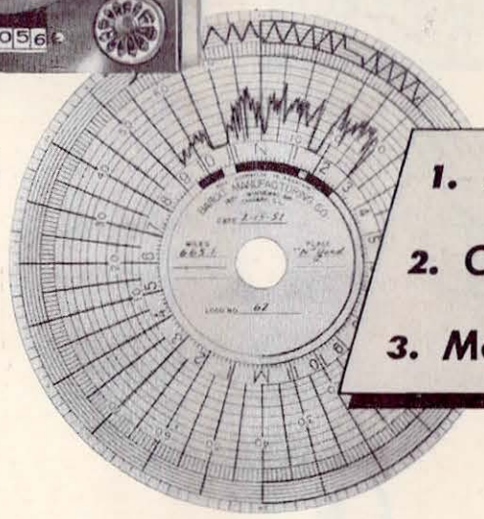
W HEELS FOR *freight cars, passenger cars, diesel locomotives*

BARCO Switch Engine RECORDERS USERS REPORT

. . . Many ADVANTAGES!

WITH BARCO RECORDERS you can actually SEE what your switch engines are doing. The daily charts produced by each recorder give Operating Departments FACTS they need for planning efficient schedules and for correcting chronic delay situations.





Model SER Switch Engine Recorder (above) and chart produced (right).

1. Many Delays Eliminated

2. Costs Reduced

3. More Work Handled

Time standing idle reduced as much as 50% . . . better scheduling, more cars handled . . . greatly improved return on investment in equipment — these are just a few of the ADVANTAGES reported by the many users of BARCO SWITCH ENGINE RECORDERS!

Simple to install and easy to use, each Barco recorder is a precision-built instrument that *indicates* (1) Speed, (2) Time, (3) Mileage and *records* (1) Speed, (2) Distance Traveled, (3) Time in Motion, (4) Time Idle. Find out about BARCO SWITCH ENGINE RECORDERS. *Ask for Barco to give you the complete story without obligation.* BARCO MANUFACTURING CO., 1800 L Winnemac Ave., Chicago 40, Illinois.

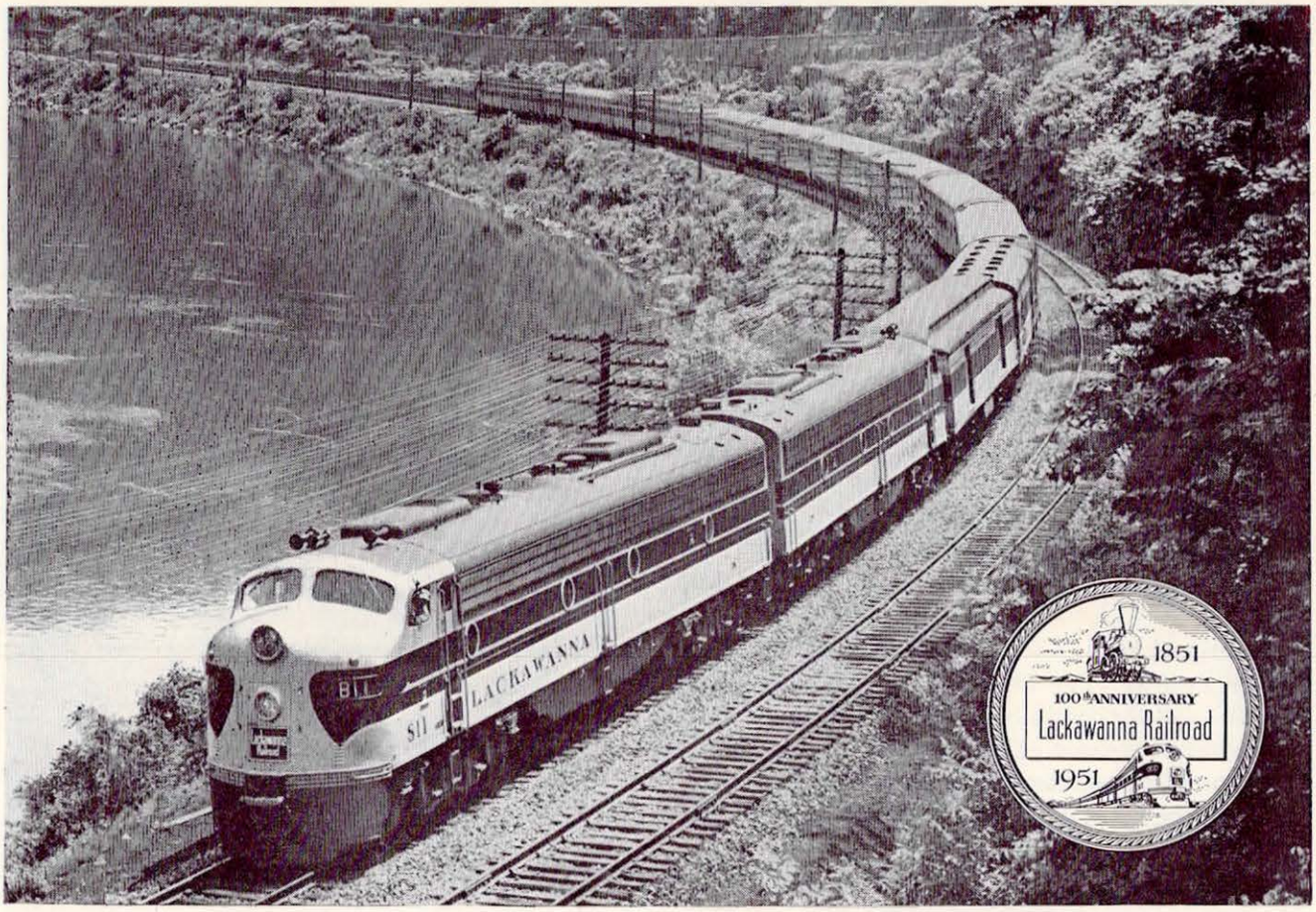
Send for this new bulletin.

BARCO

SPEED INDICATORS • SPEED RECORDERS
DIESEL LOCOMOTIVE OPERATIONS RECORDERS

Congratulations to Lackawanna Railroad *100th Anniversary*

100 years of service



Esso Standard Oil Company salutes the great Lackawanna

● Esso Standard Oil Company congratulates the Delaware, Lackawanna and Western on its one hundredth year of service to the nation. Today, a thousand miles of Lackawanna track bind the agricultural, dairy and industrial areas of the Central Atlantic States as "The Road of Anthracite" enters its second century of constant progress.

The Esso Standard Oil Company is proud that Esso Railroad Products are used by the Lackawanna. Constant research and improvement enable Esso Railroad Products to meet the most exacting specifications of America's great railroads.

The Sign of QUALITY — ESSO — The Symbol of SERVICE

RAILROAD PRODUCTS

SOLD IN: Maine, N. H., Vt., Mass., R. I., Conn., N. Y., N. J., Penna., Del., Md., D. C., Va., W. Va., N. C., S. C., Tenn., Ark., La.

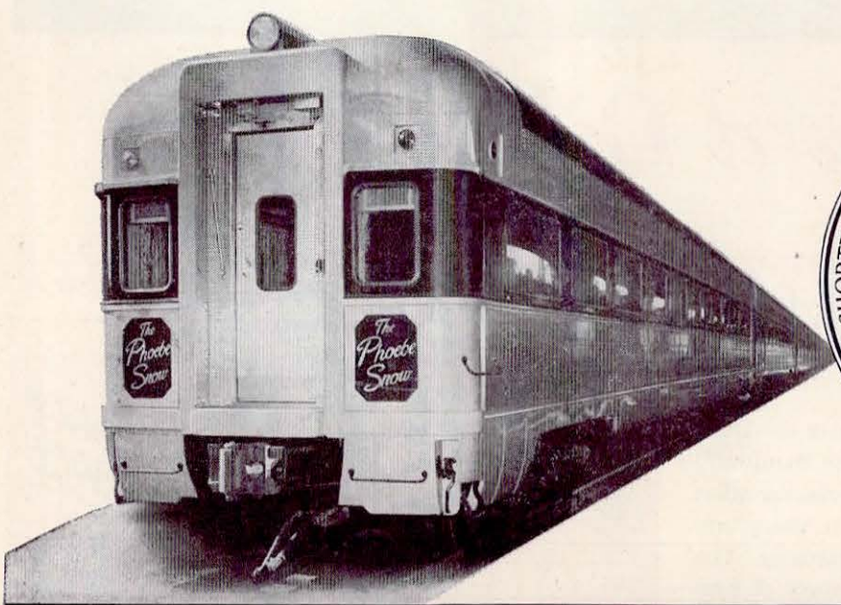
ESSO STANDARD OIL COMPANY — Boston, Mass. — New York, N. Y. — Elizabeth, N. J. — Philadelphia, Pa. — Baltimore, Md. — Richmond, Va. — Charleston, W. Va. — Charlotte, N. C. — Columbia, S. C. Memphis, Tenn. — New Orleans, La.

Congratulations D.L. and W.

...May Your SECOND Century be as Successful as Your FIRST!

Dependable "Safety" equipment installations have been a part of the Delaware Lackawanna and Western Railroad for the past fifty years. As one of your suppliers, we are proud to have contributed to your progressive growth and expansion. May we continue to serve you in the future as we have in the past.

Featured in the photograph below, is the streamliner "The Phoebe Snow." Equipped with "Safety" air conditioning, genemotors and motor alternator equipment and "Safety" lighting fixtures, this streamliner provides its passengers with the latest in railway comfort.



THE SAFETY CAR HEATING AND LIGHTING COMPANY INC.

NEW YORK · CHICAGO · PHILADELPHIA · ST. LOUIS · SAN FRANCISCO · NEW HAVEN · MONTREAL

SAFETY COMPANY PRODUCTS INCLUDE: Complete Air-Conditioning Equipment • Genemotors • Generators • Fans Regulators • Lighting Fixtures • Switchboards • Parcel Racks • Generator Drives • Motor Alternators •

In a hurry for smooth-riding freight cars? Get them now!

INSTALL A·S·F

RIDE-CONTROL® PACKAGES

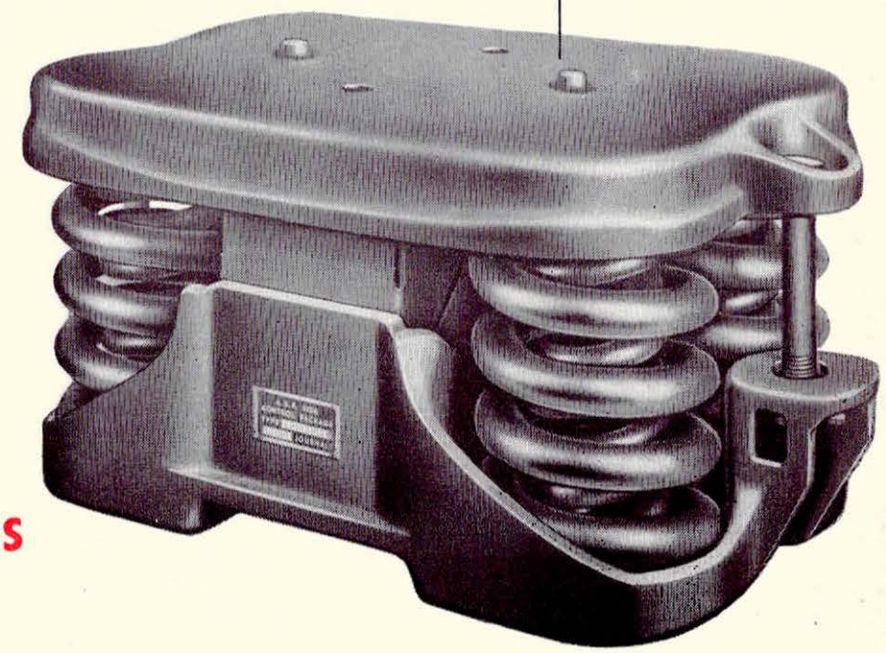
You can enjoy the advantages and savings of longer spring travel *now*, by installing the A.S.F. Ride-Control Package in your present rolling stock.

The Ride-Control Package is a complete spring group with built-in 3-way friction control (the famous A.S.F. Ride-Control principle). The unit comes completely assembled, is installed as a unit in place of the present spring group.

This Package gives 2½ to 3 inches of controlled spring travel, in place of the AAR-standard 1-9/16 to 1⅝ inches. Separate Ride-Control springs provide constant pressure on hardened friction surfaces to control movement in all three directions.

Cost is low—about $160 per car set—but it means big savings. Ride-Control helps protect lading and cut claims. It helps protect rolling stock and cut repair costs. It helps protect roadbed and cut track maintenance. You can't lose! And you can have it now!

Talk it over with your A.S.F. representative and ask him for all the details; or write American Steel Foundries, 400 North Michigan Ave., Chicago 11, Illinois.



AMERICAN STEEL FOUNDRIES

mint mark of ⬡ *fine products*

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF AUGUST AND EIGHT MONTHS OF CALENDAR YEAR 1951

Name of road		Av. mileage operated during period	Operating revenues: Freight	Passenger	Total (inc. misc.)	Operating Expenses: Maintenance of Way and structures	Maintenance of Equipment	Traffic	Transportation	Total	Operating ratio	Net from railway operation	Railway tax accruals	Net railway operating income 1951	Net railway operating income 1950
Akron, Canton & Youngstown	Aug.	171	500,588	14	521,088	73,114	59,866	34,011	149,439	345,017	66.2	176,071	84,062	80,537	79,642
	8 mos.	171	3,627,553	554	3,766,141	557,833	400,898	263,433	1,122,084	2,579,140	68.5	1,187,001	532,983	538,647	569,252
Atchison, Topeka & Santa Fe	Aug.	13,097	39,696,856	5,430,234	48,986,189	7,201,169	9,417,668	1,084,477	16,359,809	36,127,385	73.75	12,858,804	7,725,757	5,708,161	9,169,932
	8 mos.	13,096	307,048,504	34,187,377	369,870,798	62,438,901	73,722,019	9,149,397	124,654,142	285,527,414	77.20	84,343,384	49,309,844	32,771,495	43,269,973
Atlanta & St. Andrews Bay	Aug.	82	302,437	2,085	308,350	31,342	23,410	8,136	65,664	146,340	47.5	162,010	85,755	49,582	57,801
	8 mos.	82	2,326,188	16,677	2,400,623	271,575	165,408	65,139	493,036	1,108,495	46.2	1,292,128	691,547	381,715	405,229
Atlanta & West Point	Aug.	93	281,219	49,888	373,201	40,508	60,901	15,914	158,107	301,793	80.9	71,408	38,891	13,276	39,876
	8 mos.	93	2,263,584	404,080	2,996,369	382,343	448,648	124,633	1,317,914	2,470,237	82.4	526,132	281,007	88,118	83,079
Western of Alabama	Aug.	133	279,959	47,833	358,398	39,973	68,873	16,407	133,304	283,154	79.0	75,244	43,178	23,025	48,748
	8 mos.	133	2,432,162	392,522	3,057,919	433,292	504,474	127,304	1,135,517	2,384,408	78.0	673,511	377,661	229,387	179,467
Atlantic & Danville	Aug.	205	148,394	.....	152,965	34,000	9,139	11,330	58,684	124,935	81.7	28,030	9,208	1,921	10,368
	8 mos.	205	1,140,153	.....	1,165,007	230,000	75,796	82,602	422,141	904,634	77.7	260,373	81,164	55,639	44,945
Atlantic Coast Line	Aug.	5,453	9,655,494	1,559,526	12,014,358	2,017,122	2,874,507	332,744	4,720,576	10,506,549	87.4	1,507,809	950,000	548,518	419,812
	8 mos.	5,453	84,710,609	14,060,879	105,944,380	21,678,271	21,342,975	2,677,914	40,002,732	90,442,008	85.4	15,502,372	9,175,000	3,774,010	5,985,606
Charleston & Western Carolina	Aug.	343	507,533	4,026	529,820	135,779	72,301	17,403	171,311	410,977	77.6	118,843	55,000	55,340	38,037
	8 mos.	343	4,176,040	66,553	4,359,406	1,100,700	634,802	135,880	1,350,253	3,323,441	76.2	1,035,965	480,000	466,012	336,097
Baltimore & Ohio	Aug.	6,188	35,230,640	2,301,075	40,160,103	5,414,353	8,735,312	846,917	15,736,789	32,255,352	80.3	7,904,751	3,607,529	2,798,288	3,795,932
	8 mos.	6,188	260,925,583	17,212,845	295,724,479	39,053,880	67,074,905	6,668,228	119,446,364	244,046,486	82.5	51,677,993	21,041,787	22,422,367	22,824,636
Staten Island Rapid Transit	Aug.	29	264,182	53,545	324,223	37,302	35,860	1,510	169,969	271,843	83.8	52,380	34,956	—2,958	—40,773
	8 mos.	29	1,876,707	397,472	2,318,760	400,422	302,412	11,623	1,187,032	2,128,991	91.8	189,769	283,911	—218,367	—362,773
Bangor & Aroostook	Aug.	602	646,553	42,256	729,197	204,817	145,000	16,033	244,935	669,391	91.8	59,806	60,297	48,346	—5,476
	8 mos.	602	6,863,049	293,992	7,459,157	1,511,355	1,397,737	115,108	2,032,887	5,547,223	74.3	1,911,934	1,057,297	888,379	1,727,715
Bessemer & Lake Erie	Aug.	212	3,158,732	1,684	3,183,119	254,411	972,976	17,423	589,289	1,944,315	61.1	1,238,804	915,542	515,022	650,067
	8 mos.	212	19,180,061	7,701	19,388,923	1,644,088	5,511,831	145,441	4,175,720	12,174,835	62.8	7,214,038	5,245,345	3,674,837	3,266,337
Boston & Maine	Aug.	1,702	5,634,580	1,122,907	7,453,873	1,304,446	1,146,692	103,602	3,168,960	6,048,752	81.2	1,405,121	639,428	441,780	926,348
	8 mos.	1,702	45,392,565	7,712,437	58,421,105	10,370,930	9,612,031	909,129	25,225,330	48,676,483	83.3	9,744,623	4,833,866	2,089,744	3,570,560
Cambria & Indiana	Aug.	35	137,350	.....	137,416	15,216	89,323	78	26,069	142,231	103.5	—4,815	58,651	49,637	108,861
	8 mos.	35	1,064,619	.....	1,064,977	98,074	661,262	952	204,003	1,029,353	96.7	35,624	515,650	452,360	398,577
Canadian Pacific Lines in Maine	Aug.	234	243,752	50,052	322,188	111,695	103,998	7,729	162,198	396,970	123.2	—74,782	29,188	—139,469	—107,985
	8 mos.	234	3,915,204	341,943	4,469,441	837,916	688,854	57,201	1,662,375	3,342,596	74.8	1,126,845	222,297	452,484	—59,047
Canadian Pacific Lines in Vermont	Aug.	90	178,385	15,484	210,488	57,078	35,028	6,429	128,254	235,519	111.9	—25,031	14,439	—91,546	—159,941
	8 mos.	90	1,552,535	98,285	1,792,915	423,674	256,471	47,390	951,817	1,739,649	97.0	53,266	100,834	—481,291	—719,974
Central of Georgia	Aug.	1,815	2,734,491	297,963	3,304,580	521,955	537,757	124,986	1,511,574	2,878,508	87.1	426,072	223,413	169,796	287,855
	8 mos.	1,815	24,312,266	2,203,279	28,639,476	5,178,710	4,822,199	974,589	12,677,175	25,205,216	88.0	3,434,260	2,005,260	896,901	712,132
Central of New Jersey	Aug.	410	3,067,049	549,825	3,890,982	558,468	638,441	56,143	1,921,181	3,338,112	85.8	552,870	411,508	—196,688	98,447
	8 mos.	410	22,933,182	3,873,019	28,800,485	3,895,610	4,978,649	448,031	14,973,772	25,623,393	89.0	3,177,092	3,196,372	—2,856,688	—2,448,147
Central of Pennsylvania	Aug.	210	1,651,653	9,246	1,701,718	185,075	414,958	24,949	562,148	1,229,738	72 3	471,980	115,938	623,646	892,560
	8 mos.	210	12,352,621	54,237	12,724,377	1,362,215	3,054,127	202,031	4,086,574	9,033,727	71 0	3,690,650	643,436	5,342,629	6,412,924
Central Vermont	Aug.	422	848,000	94,000	1,018,000	219,811	151,131	15,342	424,679	853,148	83.8	164,852	46,696	58,917	95,578
	8 mos.	422	6,728,000	473,000	7,710,000	1,450,541	1,290,648	128,647	3,187,314	6,376,238	82.7	1,333,762	363,712	523,569	427,941
Chesapeake & Ohio	Aug.	5,116	31,007,125	982,239	33,625,504	4,540,231	6,794,210	585,731	10,535,963	23,716,422	70 5	9,909,082	5,499,300	4,862,648	5,796,315
	8 mos.	5,116	219,402,215	6,241,312	236,158,813	31,906,584	48,004,974	4,500,738	79,761,232	173,584,235	73 5	62,574,578	35,953,529	29,255,749	30,346,312
Chicago & Eastern Illinois	Aug.	886	2,341,067	335,320	2,916,428	453,148	436,851	107,009	1,093,191	2,242,884	76.9	673,544	276,500	283,072	518,367
	8 mos.	886	17,725,932	2,319,481	21,987,132	3,076,961	3,423,898	881,074	8,347,676	16,939,538	77.0	5,047,594	2,062,700	2,101,408	2,097,273
Chicago & Illinois Midland	Aug.	130	718,415	223	746,360	122,005	188,028	26,087	218,593	596,523	79.9	149,837	74,766	82,657	306,496
	8 mos.	130	6,025,444	1,680	6,159,976	850,005	1,334,657	217,498	1,727,145	4,440,839	72.1	1,719,137	871,508	834,063	1,553,577
Chicago & North Western	Aug.	7,895	14,596,962	2,149,587	18,494,265	3,046,941	3,394,886	377,997	8,277,748	15,991,096	86.5	2,503,169	1,111,189	880,196	2,609,161
	8 mos.	7,912	103,921,109	14,984,394	132,158,183	21,330,922	25,794,680	2,742,421	62,958,426	119,414,790	90.4	12,743,393	8,546,289	1,064,922	2,145,118
Chicago, Burlington & Quincy	Aug.	8,824	21,243,425	2,010,523	25,354,981	4,412,764	3,570,366	468,332	8,072,789	17,316,966	68.3	8,038,015	3,831,809	3,562,561	3,938,793
	8 mos.	8,822	144,753,885	12,558,109	172,925,502	26,689,274	26,042,605	3,610,335	61,918,055	124,376,072	71.9	48,549,430	25,489,784	18,727,528	17,099,017
Chicago Great Western	Aug.	1,474	2,771,967	36,239	2,954,354	726,200	480,156	95,587	999,605	2,387,181	80.8	567,173	147,417	187,421	431,621
	8 mos.	1,474	21,042,377	244,970	22,506,088	3,894,979	3,352,409	804,010	7,605,811	16,321,164	72.5	6,184,924	1,913,465	1,918,973	2,236,552
Chicago, Indianapolis & Louisville	Aug.	541	1,603,598	87,384	1,801,769	306,825	276,174	82,740	663,513	1,424,388	79.0	377,381	145,268	126,685	185,781
	8 mos.	541	12,454,602	634,721	13,933,337	2,435,448	2,252,774	691,989	5,026,768	11,187,401	80.3	2,745,936	1,007,158	913,543	1,114,660
Chicago, Milwaukee, St. Paul & Pacific	Aug.	10,671	19,586,173	2,147,422	24,027,420	4,088,351	4,478,662	473,394	9,973,169	20,119,668	83.7	3,907,752	2,272,000	1,266,656	3,441,335
	8 mos.	10,671	140,460,333	13,106,545	170,591,125	25,901,044	35,088,375	3,712,560	75,261,840	148,267,807	86.9	22,323,318	12,504,000	5,470,683	8,775,307
Chicago, Rock Island & Pacific	Aug.	7,917	13,307,045	1,855,614	16,462,440	3,270,757	2,419,781	449,521	6,514,641	13,414,059	81.5	3,048,381	1,321,487	939,724	2,152,265
	8 mos.	7,924	106,232,638	13,636,110	139,616,601	19,398,569	20,631,340	3,747,815	51,753,736	101,976,133	78.1	28,640,468	12,237,904	9,429,087	10,610,260
Chicago, St. Paul, Minn. & Omaha	Aug.	1,617	2,686,341	263,447	3,185,224	496,382	381,434	60,947	1,529,690	2,604,597	81.8	580,627	194,723	225,245	493,647
	8 mos.	1,617	18,291,548	1,566,731	21,560,571	3,583,347	3,445,728	504,307	11,840,028	20,411,761	94.7	1,148,810	1,471,107	—1,695,085	78,262
Clinchfield	Aug.	317	1,937,216	1,682	1,947,805	258,280	318,729	38,611	454,622	1,102,576	56.6	845,229	227,561	784,991	841,529
	8 mos.	317	15,529,463	11,303	15,623,489	2,152,612	2,555,226	311,438	3,506,833	8,787,417	56.2	6,836,072	1,558,292	6,443,034	5,086,989

(Table continued on next left-hand page)

Congratulations to the

Lackawanna Railroad

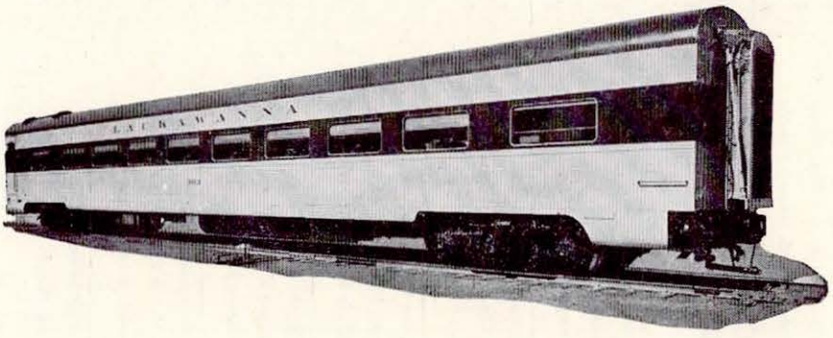
On a Century of Service—with COMFORT

THE 100TH ANNIVERSARY of the Delaware, Lackawanna and Western Railroad must bring a very special satisfaction to every member of the organization. For few railroads have earned such an outstanding reputation for achievements in making travel more pleasant and *comfortable.*

We are naturally proud that Heywood-Wakefield seating has been selected so consistently over so many years for Lackawanna coaches used in both commuting and long distance service.

Heywood-Wakefield model No. 981 seats have been especially adapted to use in the Lackawanna's new ACF coaches.

New coaches developed by ACF especially for the Lackawanna are teamed with modern Diesel power to make service faster, more comfortable.



HEYWOOD-WAKEFIELD

125TH ANNIVERSARY

Transportation Seating Division
Gardner, Mass.

REVENUES AND EXPENSES OF RAILWAYS

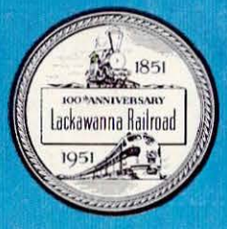
MONTH OF AUGUST AND EIGHT MONTHS OF CALENDAR YEAR 1951

Name of road		Av. mileage operated during period	Operating revenues: Freight	Passenger	Total (inc. misc.)	Operating Expenses: Maintenance of Way and structures	Maintenance of Equipment	Traffic	Transportation	Total	Operating ratio	Net from railway operation	Railway tax accruals	Net railway operating income 1951	Net railway operating income 1950
Colorado & Southern	Aug.	736	1,203,741	131,398	1,436,401	242,284	189,384	25,196	544,686	1,060,897	73.9	375,504	226,302	107,260	184,373
	8 mos.	739	8,816,792	719,788	10,298,457	1,340,835	1,613,066	211,987	3,902,336	7,513,652	73.0	2,784,805	1,695,036	844,620	692,623
Ft. Worth & Denver City	Aug.	804	1,313,275	200,074	1,613,800	220,432	239,543	52,772	670,526	1,288,760	79.9	325,040	102,835	120,870	169,867
	8 mos.	804	10,941,000	1,301,281	13,330,231	1,900,255	1,944,619	428,083	5,172,336	10,204,694	76.6	3,125,537	1,065,065	1,168,266	1,736,344
Colorado & Wyoming	Aug.	41	153,969	.....	274,568	14,831	17,500	1,144	116,230	154,447	56.2	120,121	80,732	36,867	41,034
	8 mos.	41	1,209,486	.....	2,191,038	453,747	218,965	9,566	954,430	1,724,038	78.6	467,000	248,244	204,538	216,267
Columbus & Greenville	Aug.	168	134,427	.....	140,827	55,565	28,208	4,033	49,785	155,406	110.4	—14,579	10,243	—20,374	—53,894
	8 mos.	168	1,288,363	Dr. 89	1,339,438	356,383	245,832	29,357	415,786	1,188,162	88.7	151,276	150,509	37,315	—13,537
Delaware & Hudson	Aug.	793	5,032,171	213,213	5,401,797	810,438	1,165,579	78,320	1,925,946	4,172,464	77.2	1,229,333	681,683	539,441	694,391
	8 mos.	793	36,834,071	1,250,180	39,192,434	5,353,746	8,311,157	629,179	14,882,188	30,754,057	78.5	8,438,377	4,882,634	3,859,266	3,292,645
Delaware, Lackawanna & Western	Aug.	965	6,109,198	826,660	7,611,358	904,890	1,519,330	176,555	3,476,970	6,332,601	83.2	1,278,757	729,384	568,653	904,939
	8 mos.	966	47,356,785	6,443,771	58,595,657	6,632,613	11,309,392	1,344,421	26,926,607	48,291,172	82.4	10,304,485	6,149,804	4,129,726	4,872,056
Denver & Rio Grande Western	Aug.	2,334	6,393,279	386,451	7,021,103	1,000,857	1,110,635	154,189	2,232,119	4,792,327	68.3	2,228,776	1,169,691	1,029,753	1,390,830
	8 mos.	2,341	44,176,622	2,452,960	48,428,736	6,685,099	8,591,502	1,309,289	15,808,430	34,600,028	71.5	13,828,708	7,224,281	6,598,685	4,543,999
Detroit & Mackinac	Aug.	232	227,072	Dr. 2	233,347	75,000	22,226	4,150	41,413	154,616	66.3	78,731	44,744	28,221	75,374
	8 mos.	232	1,608,203	928	1,672,789	360,000	167,068	26,882	300,938	929,979	55.6	742,810	418,628	275,079	355,950
Detroit & Toledo Shore Line	Aug.	50	605,286	.....	608,124	72,526	64,631	13,402	197,935	361,202	59.4	246,922	91,544	77,802	107,388
	8 mos.	50	5,035,794	.....	5,063,535	577,853	471,182	110,894	1,667,978	2,929,220	57.8	2,134,315	841,990	554,522	778,239
Detroit, Toledo & Ironton	Aug.	464	1,426,311	704	1,489,865	215,722	256,530	28,349	424,413	970,129	65.1	519,736	294,669	210,448	339,253
	8 mos.	464	12,126,997	3,483	12,677,384	1,690,647	2,011,467	219,663	3,461,043	7,760,907	61.2	4,916,477	2,527,050	2,096,633	2,429,197
Duluth, Missabe & Iron Range	Aug.	566	6,804,491	2,447	7,909,296	647,729	743,282	8,599	2,248,209	3,812,041	48.2	4,097,255	2,521,996	1,458,647	2,117,855
	8 mos.	565	32,077,819	13,708	36,924,345	4,997,932	5,616,851	69,199	12,252,872	23,741,952	64.3	13,182,393	9,068,570	4,160,189	5,045,217
Duluth, South Shore & Atlantic	Aug.	539	708,343	10,515	757,343	156,937	134,487	20,698	260,167	590,095	77.9	167,248	31,999	96,063	62,638
	8 mos.	539	5,169,474	61,565	5,479,091	1,018,616	961,994	172,700	2,167,586	4,465,184	81.5	1,013,907	224,027	468,644	410,783
Duluth, Winnipeg & Pacific	Aug.	175	343,000	1,500	351,600	93,929	96,729	4,593	176,345	378,568	107.7	—26,968	29,968	—88,506	44,882
	8 mos.	175	3,373,000	8,600	3,428,200	584,985	549,020	36,874	1,462,708	2,687,261	78.4	740,939	264,005	97,085	79,593
Elgin, Joliet & Eastern	Aug.	238	3,933,609	1	4,783,945	509,636	564,408	29,598	1,698,601	2,973,617	62.2	1,810,328	857,167	443,259	663,595
	8 mos.	238	28,905,908	45	36,258,971	3,459,672	5,211,096	249,424	12,941,028	23,067,498	63.6	13,191,473	6,125,750	2,889,433	6,029,178
Erie	Aug.	2,243	13,431,998	706,900	15,407,257	2,398,713	2,577,872	327,375	6,446,038	12,420,829	80.6	2,986,428	1,321,457	1,202,536	1,787,299
	8 mos.	2,244	104,301,418	4,861,937	117,591,358	15,739,993	19,128,409	2,740,193	48,856,567	91,841,644	78.1	25,749,714	11,799,027	10,316,236	11,549,068
Florida East Coast	Aug.	571	1,215,653	379,069	1,750,451	393,980	459,268	67,588	814,445	1,892,226	108.1	—141,775	152,686	—367,090	—227,352
	8 mos.	571	14,190,259	4,792,541	20,785,251	2,772,695	3,569,013	551,228	7,981,900	16,286,303	78.4	4,498,948	1,256,223	2,019,851	1,626,497
Georgia Railroad	Aug.	323	724,418	79,697	855,241	110,902	122,825	32,231	327,091	631,584	73.9	223,657	38,627	195,003	217,540
	8 mos.	323	5,511,076	498,764	6,404,555	957,527	979,334	248,382	2,543,651	5,015,419	78.3	1,389,136	308,205	1,161,583	904,637
Georgia & Florida	Aug.	359	337,635	26	343,431	82,789	36,899	24,747	118,258	279,971	81.5	63,460	19,907	16,974	50,032
	8 mos.	359	2,348,151	146	2,394,192	650,155	265,607	153,298	719,162	1,894,936	79.1	499,256	134,625	184,111	—74,998
Grand Trunk Western	Aug.	952	4,041,000	211,000	4,601,000	927,442	919,270	70,440	2,163,452	4,246,779	92.3	354,221	293,600	—122,071	650,888
	8 mos.	963	33,586,000	1,593,000	38,132,000	5,911,721	7,107,498	582,035	16,724,806	31,653,414	83.0	6,478,586	2,317,775	2,464,020	4,772,218
Canadian Natl. Lines in New Engl.	Aug.	172	191,000	17,000	257,000	72,427	55,324	2,702	126,078	277,169	107.8	—20,169	22,746	—86,309	—134,648
	8 mos.	172	1,489,000	74,100	1,870,000	462,667	392,434	21,646	1,072,971	2,092,193	111.9	—222,193	181,968	—741,035	870,815
Great Northern	Aug.	8,316	20,356,520	1,080,903	23,268,687	4,221,230	3,545,558	354,587	7,708,466	16,580,248	71.3	6,688,439	4,009,986	2,524,275	6,632,474
	8 mos.	8,316	137,823,532	9,066,197	158,428,733	29,460,828	27,449,924	2,998,104	56,922,799	123,052,444	77.7	35,376,289	22,067,231	11,505,617	5,311,025
Green Bay & Western	Aug.	224	352,178	.....	357,745	115,008	68,468	20,447	86,157	304,483	85.1	53,262	24,765	19,352	76,642
	8 mos.	224	2,689,500	.....	2,737,160	752,944	330,218	165,925	685,375	2,054,304	75.1	682,856	328,083	301,504	367,145
Gulf, Mobile & Ohio	Aug.	2,898	6,264,791	498,405	7,249,467	1,324,508	1,409,506	257,438	2,214,169	5,536,117	76.4	1,713,350	797,121	584,101	953,824
	8 mos.	2,898	49,834,901	3,485,912	57,130,909	9,574,613	11,230,790	2,021,937	17,476,307	42,983,768	75.2	14,147,141	6,421,270	5,072,249	4,996,022
Illinois Terminal	Aug.	462	981,362	84,518	1,203,437	170,955	175,085	37,040	495,575	930,280	77.3	273,157	126,177	87,689	177,677
	8 mos.	462	6,593,980	651,248	8,199,759	1,191,302	1,222,861	301,637	3,381,947	6,493,431	79.2	1,706,328	852,226	643,188	765,663
Illinois Central	Aug.	6,539	20,905,167	2,146,571	25,204,513	4,254,346	4,592,420	499,600	9,088,156	19,468,968	77.2	5,735,545	3,286,630	1,964,904	2,851,013
	8 mos.	6,539	158,094,491	15,193,030	190,529,479	31,654,115	33,940,164	4,002,653	71,654,305	149,487,742	78.5	41,041,737	19,158,944	18,023,582	17,441,532
Kansas City Southern	Aug.	891	3,107,371	177,328	3,551,002	418,880	424,014	78,844	1,089,364	2,125,661	59.9	1,425,341	555,000	648,525	643,937
	8 mos.	891	25,944,512	1,146,548	29,328,120	3,032,726	3,651,121	644,661	8,766,937	17,006,835	58.0	12,321,285	5,753,000	4,950,785	5,246,636
Kansas, Oklahoma & Gulf	Aug.	327	586,009	719	592,036	90,037	29,841	21,049	135,086	299,060	50.5	292,976	139,718	127,288	115,177
	8 mos.	327	4,360,422	4,903	4,402,745	529,032	279,661	156,934	998,549	2,136,337	48.5	2,266,408	1,065,460	931,628	676,823
Lake Superior & Ishpeming	Aug.	156	624,875	47	764,030	55,293	49,123	1,803	175,136	293,040	38.4	470,990	268,518	215,697	95,435
	8 mos.	156	2,453,824	251	2,945,355	413,794	392,807	15,742	818,785	1,748,197	59.4	1,197,158	801,234	495,721	363,418
Lehigh & Hudson River	Aug.	96	273,373	.....	273,822	46,245	27,327	11,691	85,408	179,878	65.7	93,944	39,734	37,226	36,425
	8 mos.	96	2,162,388	.....	2,186,203	332,065	202,429	87,037	653,615	1,354,797	62.0	831,406	415,481	293,039	176,293
Lehigh & New England	Aug.	188	822,010	.....	828,988	125,274	119,301	11,766	197,060	485,602	58.6	343,386	175,126	179,071	302,753
	8 mos.	190	5,674,350	.....	5,730,904	823,537	918,449	93,021	1,501,968	3,608,710	63.0	2,122,194	1,210,844	1,183,542	1,399,096
Lehigh Valley	Aug.	1,223	6,283,230	382,809	6,974,636	924,273	1,425,758	140,603	2,713,085	5,443,130	78.0	1,531,506	677,206	752,287	929,024
	8 mos.	1,226	46,712,346	2,536,689	51,412,427	6,880,540	10,982,786	1,103,821	20,623,793	41,529,755	80.8	9,882,672	4,640,985	4,608,623	4,850,464
Long Island	Aug.	365	1,269,575	3,294,256	4,819,492	625,830	858,989	7,168	2,442,014	4,079,466	84.6	740,026	484,399	—13,022	757,395
	8 mos.	365	9,876,313	23,547,889	35,493,657	4,903,397	6,837,262	103,797	18,943,346	32,043,046	90.3	3,450,611	3,569,800	—2,315,598	—750,061

(Table continued on next left-hand page)

1851 *The Route of the Phoebe Snow* 1951

CONGRATULATIONS



Lackawanna Railroad

ON YOUR 100TH ANNIVERSARY

The famous "Route of the Phoebe Snow" exemplifies a century of progress in American transportation. It is a symbol of the great strength and amazing growth of America. During the past 100 years the Lackawanna has pioneered in important ways that have helped greatly to advance the science of railroading.

Symington-Gould salutes the Lackawanna . . . for its contributions to the building of American industry and for its service to the people during Peace and War.

We, at Symington-Gould, are mighty proud of our long and close association with one of America's oldest railroads.

SERVING AMERICAN RAILROADS FOR 69 YEARS

THE SYMINGTON-GOULD CORPORATION

Works: DEPEW, NEW YORK

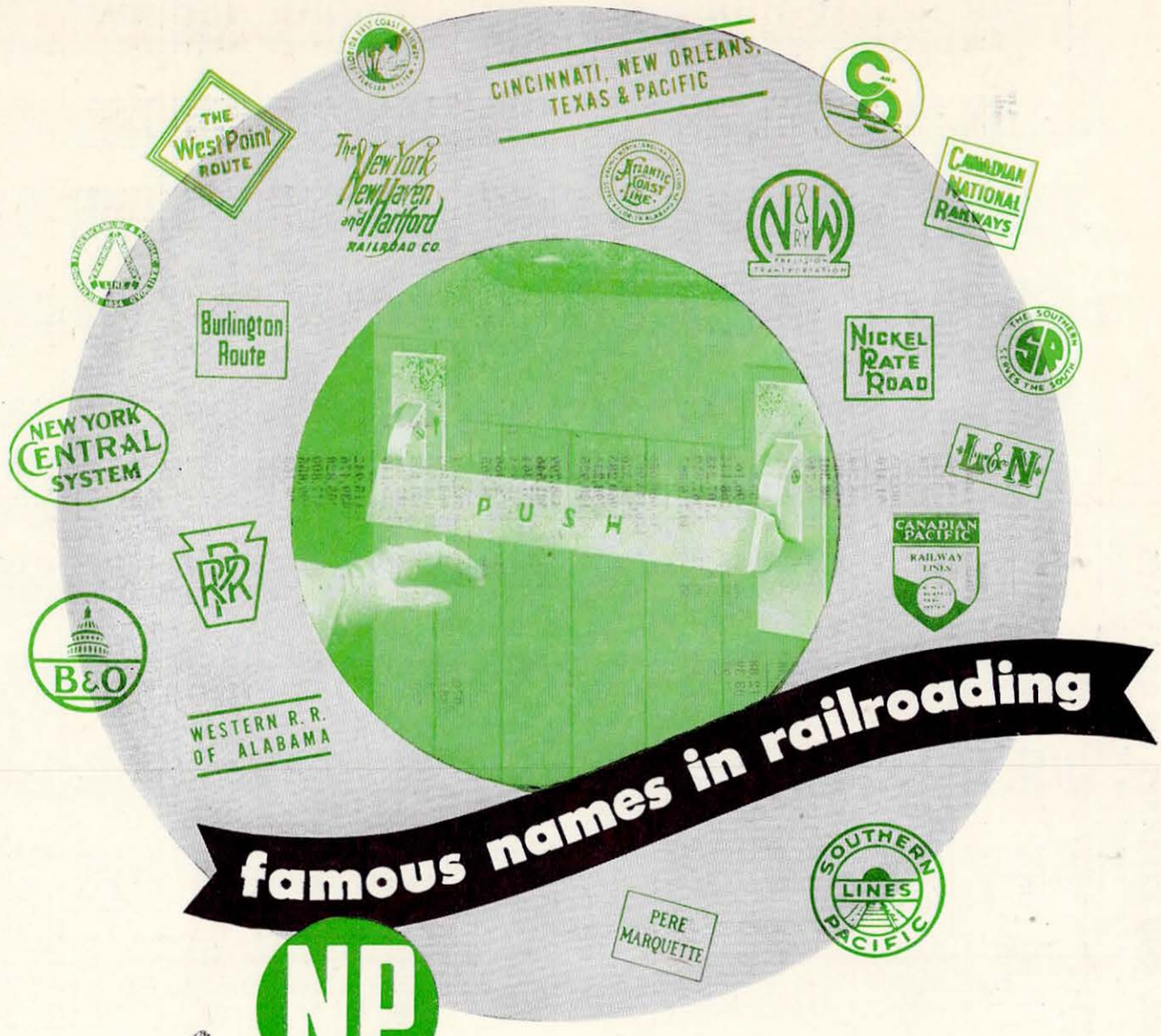
New York • Chicago • St. Louis • Boston • San Francisco • *In Canada:* ADANAC SUPPLIES, LTD., Montreal, Que.

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF AUGUST AND EIGHT MONTHS OF CALENDAR YEAR 1951

Name of road		Av. mileage operated during period	Operating revenues: Freight	Passenger	Total (inc. misc.)	Operating Expenses: Maintenance of Way and structures	Maintenance of Equipment	Traffic	Transportation	Total	Operating ratio	Net from railway operation	Railway tax accruals	Net railway operating income 1951	Net railway operating income 1950
Louisiana & Arkansas	Aug.	756	1,985,301	58,600	2,134,439	393,918	325,954	64,989	747,158	1,604,145	75.2	530,294	226,405	199,158	353,033
	8 mos.	756	14,707,402	491,702	15,782,322	3,053,021	1,891,178	528,927	4,557,613	10,606,734	67.2	5,175,588	2,522,457	1,685,794	2,541,386
Louisville & Nashville	Aug.	4,765	17,109,680	1,410,448	19,551,810	2,657,025	4,338,800	335,500	6,787,739	14,799,139	75.7	4,752,671	3,236,358	2,208,567	2,692,524
	8 mos.	4,775	128,381,955	9,964,963	146,706,442	21,212,166	31,569,589	2,583,877	55,974,173	116,560,865	79.5	30,145,577	21,480,891	13,114,030	13,803,005
Maine Central	Aug.	981	1,929,461	179,214	2,252,000	474,909	367,680	19,435	764,501	1,700,373	75.5	551,627	331,600	212,645	241,520
	8 mos.	981	15,358,109	1,081,210	17,511,278	3,299,513	3,025,173	157,527	6,019,021	13,091,410	74.8	4,419,868	2,315,662	1,787,282	1,434,582
Midland Valley	Aug.	334	119,265	7	151,613	53,040	20,464	4,177	60,486	145,208	95.8	6,405	18,535	—22,345	12,723
	8 mos.	334	1,355,573	60	1,377,538	385,209	138,253	33,637	475,640	1,089,981	79.1	287,557	162,359	40,076	85,049
Minneapolis & St. Louis	Aug.	1,106	1,827,785	13,492	1,900,207	357,687	271,870	120,482	649,829	1,508,301	79.4	391,906	212,340	98,075	331,068
	8 mos.	1,406	13,285,974	102,897	13,862,073	2,658,852	2,134,876	917,069	4,615,690	11,216,749	80.9	2,645,324	1,440,235	722,027	1,141,071
Minn., St. Paul & Saulte Ste. Marie	Aug.	3,224	3,485,106	119,521	3,810,087	762,527	707,343	76,561	1,439,097	3,122,165	81.9	687,922	133,603	529,175	604,358
	8 mos.	3,224	23,845,282	698,430	25,861,543	5,552,215	5,280,418	588,383	10,729,117	23,131,871	89.4	2,729,672	1,577,414	995,639	120,795
Mississippi Central	Aug.	148	216,886	221	221,385	45,765	27,914	12,887	57,400	153,283	69.2	68,102	33,091	24,717	34,905
	8 mos.	148	1,708,420	—74	1,742,586	336,258	223,702	103,392	458,360	1,196,164	68.6	546,422	252,625	206,433	146,036
Missouri-Illinois	Aug.	172	484,049	296	488,959	80,709	39,824	9,934	127,992	268,134	54.8	220,825	115,786	112,172	64,042
	8 mos.	172	3,412,226	1,619	3,468,405	532,386	522,632	64,727	921,825	2,107,243	60.8	1,361,162	875,160	552,498	498,735
Missouri-Kansas-Texas Lines	Aug.	3,242	5,621,238	375,803	6,513,972	850,999	963,417	248,132	2,600,371	4,967,010	76.3	1,546,962	709,112	498,262	842,713
	8 mos.	3,243	42,742,492	3,424,432	50,416,417	7,855,826	7,545,248	1,952,389	19,800,583	39,716,087	78.8	10,700,330	4,744,295	3,799,331	5,106,320
Missouri Pacific	Aug.	6,950	19,011,944	1,248,950	22,012,895	4,128,913	3,356,838	447,713	8,068,494	16,668,686	75.6	5,374,209	1,707,885	3,041,507	3,062,227
	8 mos.	6,959	132,524,795	8,312,432	154,344,108	27,294,746	30,319,451	3,524,805	59,929,160	126,143,907	81.7	28,200,201	10,465,410	13,734,088	16,358,068
Gulf Coast Lines	Aug.	1,727	3,376,178	98,903	3,677,561	699,517	522,835	81,867	1,302,466	2,758,326	75.0	919,235	327,759	375,840	321,179
	8 mos.	1,727	26,681,855	892,741	29,096,357	5,910,536	4,483,342	673,226	9,713,517	21,960,285	75.47	7,136,072	2,515,375	2,921,887	3,597,752
International-Great Northern	Aug.	1,104	2,923,207	233,240	3,425,356	675,894	578,144	62,426	1,341,116	2,798,234	81.7	627,122	144,297	321,230	235,782
	8 mos.	1,104	21,411,625	1,850,025	25,329,817	5,280,370	4,331,926	440,192	9,998,872	21,128,925	83.4	4,200,892	1,126,830	1,882,301	1,963,543
Monongahela	Aug.	178	850,733	.....	853,936	98,393	91,913	1,255	252,104	448,799	52.6	405,137	90,809	158,159	34,272
	8 mos.	178	5,947,817	Dr. 32	5,979,754	717,445	699,096	9,557	2,034,660	3,521,546	58.9	2,458,208	576,397	710,316	129,879
Montour	Aug.	51	253,529	.....	254,172	42,937	95,707	893	98,170	237,364	93.4	16,808	47,203	33,025	64,845
	8 mos.	51	1,681,756	.....	1,689,185	245,800	695,617	7,173	702,592	1,716,994	101.6	—27,809	273,129	201,632	347,921
Nashville, Chatt. & St. Louis	Aug.	1,049	2,739,991	186,435	3,170,029	606,239	472,418	110,093	1,075,736	2,376,966	75.0	793,063	974,676	—152,825	456,962
	8 mos.	1,049	21,594,441	1,444,392	25,070,755	4,551,325	3,744,184	891,644	8,997,146	19,136,565	76.3	5,934,190	3,824,511	2,284,011	2,699,670
New York Central	Aug.	10,725	50,756,891	11,330,485	69,951,145	9,508,141	13,941,789	1,070,190	30,924,729	58,512,481	83.6	11,438,664	5,089,843	4,272,938	6,782,652
	8 mos.	10,727	391,002,297	79,376,064	527,656,513	70,213,518	109,106,196	8,381,666	246,626,060	459,068,596	87.0	68,587,917	39,776,127	14,781,274	18,757,955
Pittsburgh & Lake Erie	Aug.	221	4,086,255	84,897	4,356,942	553,694	1,558,647	73,664	1,429,235	3,831,327	87.9	525,615	645,235	586,276	613,326
	8 mos.	221	30,881,882	650,666	33,049,185	4,076,821	10,227,479	584,716	11,569,158	28,134,153	85.1	4,915,032	5,434,345	5,211,125	5,244,169
New York, Chicago & St. Louis	Aug.	2,192	13,497,612	177,179	14,256,215	1,597,165	2,142,535	303,445	4,826,688	9,316,104	65.4	4,940,111	2,282,348	2,201,110	2,207,995
	8 mos.	2,192	100,235,366	1,393,928	105,147,808	12,149,838	17,792,740	2,448,026	37,358,215	73,275,146	69.7	31,872,662	14,720,354	14,132,504	15,565,443
New York, New Haven & Hartford	Aug.	1,794	7,523,301	4,396,030	13,236,898	2,187,847	2,243,207	191,239	5,830,753	11,115,942	84.0	2,123,956	872,000	420,002	894,131
	8 mos.	1,794	61,581,359	31,789,106	103,463,377	15,984,809	17,052,781	1,494,349	45,165,525	84,839,476	82.0	18,623,901	7,212,000	4,197,994	6,513,111
New York Connecting	Aug.	21	250,350	.....	264,663	124,205	18,185	.....	60,515	205,828	77.8	58,835	82,765	9,363	57,382
	8 mos.	21	2,125,054	.....	2,219,443	789,158	133,393	.....	532,324	1,477,800	66.6	741,643	581,172	397,732	420,273
New York, Ontario & Western	Aug.	542	573,261	27,698	623,505	143,676	91,119	27,417	306,831	599,855	96.2	23,650	39,321	—74,561	368
	8 mos.	542	4,631,506	65,684	4,890,002	935,149	701,811	211,215	2,305,093	4,398,163	89.9	491,839	300,382	—343,890	—475,989
New York, Susquehanna & Western	Aug.	120	385,627	35,563	442,857	59,699	56,175	6,709	198,100	345,083	77.9	97,774	27,469	40,570	74,072
	8 mos.	120	3,211,526	299,667	3,661,240	438,536	427,072	63,656	1,552,471	2,678,598	73.2	982,642	286,899	392,391	334,261
Norfolk & Western	Aug.	2,135	17,265,984	569,424	18,616,576	2,240,094	3,227,488	290,092	5,220,443	11,612,209	62.4	7,004,367	4,921,141	2,979,523	2,948,764
	8 mos.	2,135	122,289,037	3,971,027	131,928,405	18,199,610	26,941,833	2,266,613	39,692,334	91,859,766	69.6	40,068,639	28,811,176	18,772,265	16,666,162
Norfolk Southern	Aug.	643	963,659	1,328	991,214	194,983	128,372	47,774	336,363	777,593	78.4	213,621	98,783	61,096	67,365
	8 mos.	643	7,350,927	1,371	7,540,378	1,388,797	917,459	368,260	2,457,662	5,689,138	75.4	1,851,240	925,693	566,441	398,950
Northern Pacific	Aug.	6,887	14,316,006	811,866	16,187,566	2,812,970	3,046,010	273,215	5,761,931	12,626,232	78.0	3,561,334	2,025,928	1,441,538	3,659,435
	8 mos.	6,887	96,799,430	5,251,306	109,520,834	18,028,110	22,186,200	2,218,608	42,720,038	90,471,502	82.6	19,049,332	13,671,225	8,256,944	7,406,853
Northwestern Pacific	Aug.	331	1,130,603	5,963	1,163,597	247,934	110,109	4,258	472,299	850,894	73.1	312,703	136,145	71,594	83,464
	8 mos.	331	7,377,389	33,473	7,613,842	1,828,087	848,694	38,106	3,336,744	6,182,897	81.2	1,430,945	628,080	194,351	380,794
Oklahoma City-Ada-Atoka	Aug.	132	110,066	.....	110,657	24,026	2,611	1,464	22,796	55,001	49.7	55,656	22,413	24,643	7,338
	8 mos.	132	773,798	—66	780,501	177,554	33,742	13,385	173,991	428,944	55.0	351,560	147,044	113,007	33,763
Pennsylvania	Aug.	10,127	69,083,568	13,357,618	90,927,779	12,139,733	20,537,978	1,275,234	38,078,838	75,041,515	82.5	15,886,264	8,229,285	5,774,627	7,083,963
	8 mos.	10,127	517,874,190	101,078,150	680,145,823	85,427,962	169,087,134	10,287,812	298,470,405	588,258,543	86.5	91,887,280	44,238,950	34,256,438	34,963,994

(Table continued on next left-hand page)



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WORLD'S LARGEST MANUFACTURER OF DOOR CONTROL AND SAFETY EQUIPMENT

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF AUGUST AND EIGHT MONTHS OF CALENDAR YEAR 1951

Name of road		Av. mileage operated during period	Operating revenues			Operating Expenses					Operating ratio	Net from railway operation	Railway tax accruals	Net railway operating income	
			Freight	Passenger	Total (inc. misc.)	Maintenance of Way and structures	Maintenance of Equipment	Traffic	Transportation	Total				1951	1950
Pennsylvania-Reading Seashore Lines	Aug.	365	709,950	469,017	1,226,444	221,905	109,121	12,093	726,011	1,110,920	90.6	115,524	104,006	—155,441	—42,006
	8 mos.	366	4,964,690	1,807,342	7,089,710	1,774,146	768,604	87,818	4,824,967	7,761,560	109.5	—671,850	807,101	—2,582,149	—3,201,666
Pittsburg & Shawmut	Aug.	97	193,555	.....	194,551	48,541	61,650	3,263	67,904	179,172	92.1	15,379	7,188	22,686	14,582
	8 mos.	97	1,582,457	.....	1,591,594	253,565	440,856	27,652	447,348	1,229,181	77.2	362,413	88,274	300,501	298,954
Pittsburgh & West Virginia	Aug.	132	722,721	.....	735,521	159,539	199,404	43,223	202,311	629,815	85.6	105,706	68,260	81,870	121,356
	8 mos.	132	5,698,077	.....	5,776,188	1,143,390	1,410,810	386,966	1,608,696	4,758,882	82.4	1,017,306	654,264	810,276	891,573
Reading	Aug.	1,313	9,690,903	587,534	10,859,984	1,813,983	2,487,314	146,460	4,318,714	9,133,722	84.1	1,726,262	1,126,315	845,305	1,221,911
	8 mos.	1,313	75,164,249	4,609,940	84,809,757	13,108,620	18,898,957	1,118,741	34,241,226	70,080,539	82.6	14,729,218	8,618,968	6,940,678	7,998,748
Richmond, Fredericksburg & Potomac	Aug.	118	1,416,432	590,803	2,221,592	294,054	341,830	21,667	791,406	1,579,351	71.1	642,241	379,766	177,402	233,525
	8 mos.	118	11,838,897	4,722,846	18,457,640	2,315,580	2,278,732	164,415	5,962,692	11,812,576	64.0	6,645,064	3,606,641	2,194,588	2,087,249
Rutland	Aug.	397	439,641	46,839	560,349	80,073	78,504	16,110	285,520	483,613	81.8	76,736	32,980	26,722	80,463
	8 mos.	403	3,136,018	215,768	3,934,236	670,876	656,880	122,781	2,035,744	3,662,603	92.5	271,633	263,174	—135,142	—127,678
Sacramento Northern	Aug.	271	294,195	.....	302,159	44,561	22,292	2,106	102,284	178,979	59.2	123,180	Cr. 1,669	104,110	161,615
	8 mos.	271	2,109,999	205	2,156,541	439,364	229,074	17,230	751,947	1,502,401	69.7	654,140	113,016	372,210	245,600
St. Louis-San Francisco	Aug.	4,601	9,315,017	635,830	10,742,467	1,881,905	1,793,872	295,727	4,110,471	8,547,379	79.6	2,195,088	1,212,627	929,720	1,626,718
	8 mos.	4,613	69,854,260	5,048,588	80,616,931	13,726,411	13,830,006	2,219,741	30,963,749	64,449,657	79.9	16,167,274	9,205,716	7,114,930	7,924,019
St. Louis, San Francisco & Texas	Aug.	159	426,432	12,531	469,726	51,850	37,468	15,682	155,470	274,545	58.4	195,181	106,932	44,374	33,067
	8 mos.	159	2,950,700	90,338	3,249,122	393,031	293,050	145,651	1,232,822	2,163,580	66.6	1,085,542	436,470	244,868	139,401
St. Louis Southwestern Lines	Aug.	1,569	5,504,097	63,874	5,786,103	749,410	654,389	150,955	1,837,272	3,588,789	62.0	2,197,314	1,012,647	855,798	1,356,489
	8 mos.	1,569	44,108,628	473,725	46,204,786	5,829,247	5,579,413	1,218,133	14,640,201	28,782,798	62.3	17,421,988	9,183,027	6,087,011	7,082,261
Seaboard Air Line	Aug.	4,146	9,678,080	1,123,703	11,623,363	1,748,623	1,826,701	347,159	3,874,745	8,297,124	71.4	3,326,239	1,797,636	1,579,671	1,575,794
	8 mos.	4,146	84,208,696	10,294,012	101,267,777	16,587,644	17,263,341	2,773,256	34,425,392	75,238,209	74.3	26,029,568	12,839,779	11,468,399	10,292,321
Southern	Aug.	6,333	18,469,170	1,977,533	21,767,028	3,215,048	4,280,088	402,008	7,742,574	16,532,665	76.0	5,234,363	2,696,599	2,167,308	2,639,720
	8 mos.	6,342	145,280,912	13,732,927	170,278,031	24,000,994	33,551,435	3,176,649	60,808,219	128,475,458	75.5	41,802,573	20,435,414	16,926,106	17,470,160
Alabama Great Southern	Aug.	327	1,354,118	110,524	1,580,978	252,673	405,458	34,598	555,314	1,314,660	83.2	266,318	182,729	86,228	151,546
	8 mos.	318	11,089,717	778,728	12,831,444	1,894,253	3,213,476	258,120	4,573,559	10,434,565	81.3	2,396,879	1,763,034	886,405	1,135,381
Cinn., New Orleans & Texas Pacific	Aug.	336	3,368,848	200,840	3,762,991	488,537	881,452	66,705	950,536	2,510,025	66.7	1,252,966	828,215	556,059	583,341
	8 mos.	336	26,364,688	1,730,085	29,495,150	3,676,894	6,451,145	536,692	7,940,802	19,615,840	66.5	9,879,310	6,308,064	4,220,397	4,729,242
Georgia Southern & Florida	Aug.	397	570,951	73,346	703,147	157,870	69,601	7,462	214,124	465,430	66.2	237,717	68,960	60,525	55,054
	8 mos.	397	4,454,627	689,552	5,597,346	1,292,918	543,947	62,432	1,771,380	3,896,721	68.5	1,760,625	482,738	409,359	381,841
New Orleans & Northeastern	Aug.	203	957,686	67,100	1,086,025	152,580	132,717	20,576	242,616	596,452	54.9	489,573	301,710	151,013	190,292
	8 mos.	203	7,816,884	443,171	8,693,048	1,276,935	1,038,196	156,242	2,014,526	4,847,156	55.8	3,845,892	2,327,953	1,243,602	1,419,768
Southern Pacific	Aug.	8,130	38,727,941	4,206,531	45,423,627	5,136,069	9,307,334	757,924	17,939,789	35,239,396	77.6	10,184,231	5,188,050	3,562,637	5,320,397
	8 mos.	8,128	288,509,362	28,878,093	336,438,630	38,387,479	69,665,836	6,082,011	130,792,704	260,559,855	77.4	75,878,775	40,859,750	24,573,008	24,038,306
Texas & New Orleans	Aug.	4,292	9,902,030	889,393	11,460,473	1,772,031	1,994,161	243,574	4,680,466	9,231,764	80.6	2,228,709	1,023,166	552,279	968,218
	8 mos.	4,301	78,116,510	6,689,645	90,523,768	14,637,583	15,051,000	1,961,371	35,369,705	71,353,514	75.0	19,170,254	8,895,399	5,869,504	6,760,029
Spokane International	Aug.	152	243,929	1,027	250,528	51,784	31,756	5,067	65,352	164,209	65.5	86,319	39,836	29,619	42,176
	8 mos.	152	1,627,391	7,619	1,724,648	439,494	184,848	38,335	462,600	1,199,672	69.6	524,976	191,942	215,043	274,349
Spokane, Portland & Seattle	Aug.	931	2,858,765	113,332	3,101,127	447,677	304,647	24,543	913,487	1,784,184	57.5	1,316,943	647,999	505,462	833,856
	8 mos.	931	18,544,225	703,417	20,245,958	3,190,362	2,437,304	195,129	6,052,541	12,577,649	62.1	7,668,309	2,836,127	3,911,614	2,699,783
Tennessee Central	Aug.	286	435,800	14,834	474,077	101,598	65,724	11,591	153,481	351,200	74.1	122,877	25,092	56,610	92,560
	8 mos.	286	3,050,227	154,259	3,385,726	719,228	550,012	88,456	1,160,924	2,674,928	79.0	710,798	200,801	249,426	328,105
Texas & Northern	Aug.	8	135,312	.....	146,389	5,803	13,215	961	23,573	47,605	32.5	98,784	54,103	31,113	36,608
	8 mos.	8	839,845	.....	939,814	121,544	90,807	7,710	238,219	492,850	52.4	446,964	210,662	132,136	255,619
Texas & Pacific	Aug.	1,846	5,700,223	501,850	6,623,295	889,137	966,184	169,964	2,282,857	4,634,620	70.0	1,988,675	675,480	883,906	903,290
	8 mos.	1,846	43,731,864	3,486,465	50,913,578	6,992,943	7,784,971	1,365,513	17,074,146	35,775,437	70.3	15,138,141	6,418,615	5,922,022	5,384,104
Texas Mexican	Aug.	162	268,115	.....	312,293	83,849	58,277	7,489	59,989	227,360	72.8	84,933	33,358	30,308	60,449
	8 mos.	162	1,977,097	.....	2,237,713	539,783	281,985	58,140	508,765	1,536,159	68.6	701,554	268,103	260,416	427,728
Toledo, Peoria & Western	Aug.	239	522,315	.....	531,082	101,469	32,475	40,490	137,815	345,166	64.99	185,916	47,994	87,892	122,746
	8 mos.	239	4,429,525	189	4,487,764	797,723	319,779	345,538	1,082,030	2,815,415	62.74	1,672,349	780,979	525,583	601,663
Union Pacific	Aug.	9,756	38,583,839	4,235,869	45,877,582	5,815,376	8,522,542	815,261	16,864,129	34,291,108	74.7	11,586,474	6,911,718	2,687,737	5,908,362
	8 mos.	9,722	275,538,237	25,581,964	323,474,426	46,313,847	64,340,147	7,082,325	117,166,478	251,903,238	77.9	71,571,188	47,014,854	13,069,660	20,102,789
Utah	Aug.	110	142,429	.....	142,976	18,332	46,622	684	55,098	127,620	89.3	15,356	10,757	18,627	30,644
	8 mos.	110	724,465	.....	726,323	137,598	369,774	6,263	355,445	926,495	127.6	—200,172	83,698	—184,473	—134,736
Virginian	Aug.	643	4,375,780	3,426	4,527,532	516,124	939,346	44,137	933,485	2,526,038	55.8	2,001,494	1,393,000	799,594	933,546
	8 mos.	643	28,796,323	21,026	29,853,453	3,517,254	6,549,640	336,099	6,510,213	17,643,993	59.1	12,209,460	8,082,500	5,642,347	5,280,766
Wabash	Aug.	2,393	7,561,205	486,722	8,746,719	1,394,424	1,178,833	278,960	3,865,816	7,079,180	80.9	1,667,539	754,811	437,764	791,641
	8 mos.	2,393	63,765,734	3,431,606	72,432,248	10,725,045	9,660,539	2,186,687	30,375,103	55,765,025	77.0	16,667,223	7,560,428	5,105,757	5,945,175
Ann Arbor	Aug.	294	845,978	.....	907,077	119,280	106,145	26,303	345,548	622,538	68.6	284,539	149,305	118,579	147,340
	8 mos.	294	6,130,875	.....	6,285,516	777,101	857,417	202,837	2,585,339	4,579,471	72.9	1,706,045	881,543	666,601	916,228
Western Maryland	Aug.	837	3,851,397	13,104	4,035,169	549,230	825,189	81,430	1,272,425	2,890,642	71.6	1,144,527	733,000	658,855	803,915
	8 mos.	837	30,175,331	77,632	31,684,661	4,344,372	6,318,959	631,794	10,003,615	22,553,359	71.2	9,131,302	5,549,000	5,335,181	5,028,722
Western Pacific	Aug.	1,193	4,265,924	289,368	4,666,423	645,945	707,176	184,465	1,376,020	3,147,498	67.4	1,518,925	815,052	596,515	1,316,886
	8 mos.	1,193	32,674,817	2,059,536	35,489,442	4,928,035	5,281,186	1,365,703	10,247,026	23,824,437	67.1	11,665,005	6,229,627	4,779,417	4,557,785
Wisconsin Central	Aug.	1,046	2,614,460	59,620	2,814,406	455,500	467,190	66,057	1,137,008	2,262,729	80.4	551,677	—44,191	382,885	594,631
	8 mos.	1,050	18,969,800	349,591	20,341,009	2,899,318	3,745,969	522,501	8,622,255	16,605,135	81.6	3,735,874	1,063,329	1,260,088	2,229,451

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. . . at the Lowest Cost

Working for the Jersey Central—the Pullman-Standard Power Ballaster, with J. W. Rementer, Track Supervisor, Mauch Chunk, Pa.

Take it from the Jersey Central

this Power Ballaster's doing a job!

Mr. J. W. Rementer has summed it up, from his own observation and from careful records of performance on the Jersey Central. Read what he says:

> **"We use Pullman-Standard Power Ballasters because we have found them to be most efficient. Especially important is their ability to tamp all types of ballast, *from cinders to large traprock,* and to give *full compaction* while maintaining a *very high production rate.* We find that the Power Ballaster can handle a surface-smoothing job or a high lift with equal facility."**

Studies of Power Ballaster performance on the Jersey Central are available to show the conclusive type of evidence on which Mr. Rementer's verdict is based. Operating records made on other railroads are also on open file. The Pullman-Standard representative will be glad to show you this comprehensive data.

You should see it. We believe it will convince you that, no matter what tamping job you may want to do, the Power Ballaster will do it better, at lower cost, than any other tamper in existence today.

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Providing a means of insulating locomotive steam pipes, with their compound curves, radical bends, limited clearances and exposure to the weather—that is the job of Insutape. And, because it has done its job with lasting efficiency and economy, it has long been the recognized standard with locomotive builders and railroads from coast to coast.

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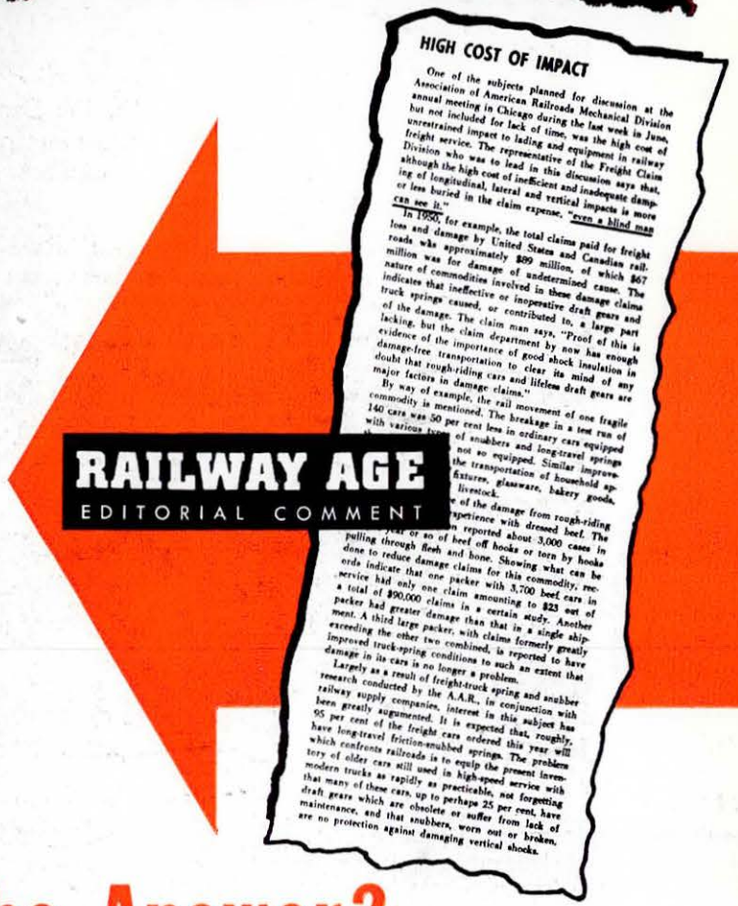
"even a blind man can see it"

from Sept. 10 Railway Age

"One of the subjects planned for discussion at the Association of American Railroads Mechanical Division annual meeting in Chicago during the last week in June, but not included for lack of time, was the high cost of unrestrained impact to lading and equipment in railway freight service. The representative of the Freight Claim Division who was to lead in this discussion says that, *although the high cost of inefficient and inadequate damping of longitudinal, lateral and vertical impacts is more or less buried in the claim expense, "even a blind man can see it."*

The nature of commodities involved in these damage claims indicates that ineffective or inoperative draft gears and truck springs caused, or contributed to, a large part of the damage. The claim man says, "Proof of this is lacking, but the claim department by now has enough evidence of the importance of good shock insulation in damage-free transportation to clear its mind of any doubt that rough-riding cars *and lifeless draft gears are major factors in damage claims.*"



RAILWAY AGE
EDITORIAL COMMENT

HIGH COST OF IMPACT

One of the subjects planned for discussion at the Association of American Railroads Mechanical Division annual meeting in Chicago during the last week in June, but not included for lack of time, was the high cost of unrestrained impact to lading and equipment in railway freight service. The representative of the Freight Claim Division who was to lead in this discussion says that, although the high cost of inefficient and inadequate damping of longitudinal, lateral and vertical impacts is more or less buried in the claim expense, "even a blind man can see it."

In 1950, for example, the total claims paid for freight loss and damage by United States and Canadian railroads was approximately $89 million, of which $67 million was for damage of undetermined cause. The nature of commodities involved in these damage claims indicates that ineffective or inoperative draft gears and truck springs caused, or contributed to, a large part of the damage. The claim man says, "Proof of this is lacking, but the claim department by now has enough evidence of the importance of good shock insulation in damage-free transportation to clear its mind of any doubt that rough-riding cars and lifeless draft gears are major factors in damage claims."

By way of example, the rail movement of one fragile commodity is mentioned. The breakage in a test run of 140 cars was 50 per cent less in ordinary cars equipped with various [illegible] of snubbers and long-travel springs not so equipped. Similar improvements in the transportation of household appliances, glassware, bakery goods, livestock, and of the damage from rough-riding experience with dressed beef. The [illegible] or so of beef off hooks or torn by hooks pulling through flesh and bone. Showing what can be done to reduce damage claims for this commodity, records indicate that one packer with 3,700 beef cars in service had only one claim amounting to $23 out of a total of $90,000 claims in a certain study. Another packer had greater damage than that in a single shipment. A third larger packer, with claims formerly greatly exceeding the other two combined, is reported to have improved truck-spring conditions to such an extent that damage in its cars is no longer a problem.

Largely as a result of freight-truck spring and snubber research conducted by the A.A.R., in conjunction with railway supply companies, interest in this subject has been greatly augumented. It is expected that, roughly, 95 per cent of the freight cars ordered this year will have long-travel friction-snubbed springs. The problem which confronts railroads is to equip the present inventory of older cars still used in high-speed service with modern trucks as rapidly as practicable, not forgetting that many of these cars, up to perhaps 25 per cent, have draft gears which are obsolete or suffer from lack of maintenance, and that snubbers, worn out or broken, are no protection against damaging vertical shocks.

The Answer?

The answer is better cushioning . . . equipment of all cars with WAUGHMAT TWIN CUSHIONS. TWIN CUSHIONS, comprised of a series of rubber pads bonded thru steel plates, have no solid point. Double acting, they cushion in pull and in buff. Reducing the force and frequency of impacts, they halve those component vertical shocks so destructive of lading.

WAUGHMAT TWIN CUSHIONS are the lowest cost *big* improvement on any railroad car.

Specify on new cars or for draft gear replacement on existing cars.

WAUGHMAT *Twin Cushions*

TRADE MARK REGISTERED

WAUGH EQUIPMENT COMPANY - 420 LEXINGTON AVE, NEW YORK 17, N.Y.

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A salute to the past ·

ONE hundred years ago this month, the Lackawanna's plucky little "Spitfire" made its inaugural run over the 14-mile Liggett's Gap route between Scranton and Hallstead.

From a modest beginning, with this quaint little firebelcher pulling wooden bench coaches, has grown the Delaware, Lackawanna and Western Railroad — a major artery in one of our nation's most highly industrialized areas.

Today, as it enters its second century, the Lackawanna relies on a proud fleet of 114 General Motors Diesel locomotives to provide fast, safe, dependable transportation for passengers and shippers alike.

Last year these locomotives rolled up a total of 6,138,639 miles—handling 74% of the Lackawanna's main-line passenger traffic and 86% of its freight. Bringing new concepts of comfort and luxury to travel, they pull such trains as the ultramodern "Phoebe Snow" on its daily scenic run over the shortest route between New York and Buffalo.

Hauling heavier tonnages on faster schedules, they speed freight over once-grueling grades through the Pocono Mountains, with less need for helper service. And because 17 years' main-line experience proves they do a better job at lower cost, General Motors locomotives help progressive roads like the Lackawanna make good their pledge—*to provide even better transportation service in the years to come.*

It's a pledge we of Electro-Motive Division are more than happy to share.

· a pledge for the future

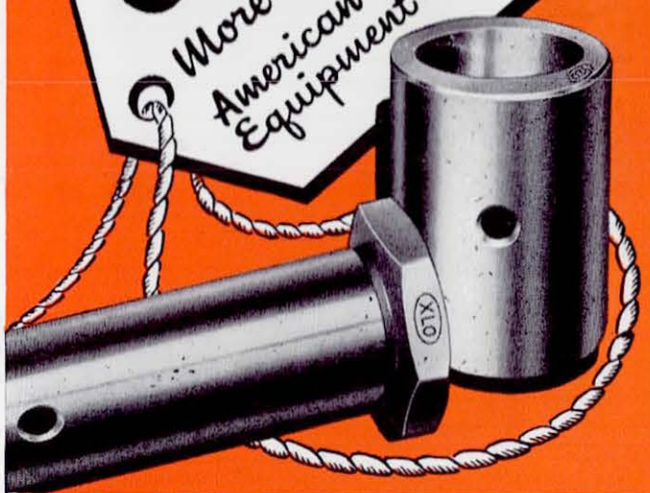
ELECTRO-MOTIVE DIVISION

GENERAL MOTORS · LA GRANGE, ILL. GENERAL MOTORS LOCOMOTIVES *Home of the Diesel Locomotive*

In Canada: GENERAL MOTORS DIESEL, LTD., London, Ont.

The Proof of a Product is its Endorsement

OK More than 200 American Railroads and Equipment Builders...



Experience has proved that Ex-Cell-O hardened and ground steel pins and bushings last longer. That's why so many American railroads have standardized on Ex-Cell-O products. They have found that by resisting road shock and vibration, Ex-Cell-O pins and bushings reduce wear on costly foundation parts; cut out-of-service time to a minimum; frequently give from four to six times longer service than other pins and bushings. Standard styles and sizes for steam, Diesel and passenger car equipment are listed in Ex-Cell-O Bulletin 32381. A free copy is yours on request.

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HARDENED AND PRECISION GROUND STEEL PINS AND BUSHINGS

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Railroad Division **EX-CELL-O CORPORATION** Detroit 32, Michigan

CONGRATULATIONS

to the LACKAWANNA

—on a century of leadership and service

Tuco Products Corporation joins in congratulating the Lackawanna Railroad on its 100th anniversary. As a pioneer industry whose wheels have helped carry America forward, the Lackawanna can look back proudly on a record of service, can look ahead to a future of unlimited attainment.

Tuco Products Corporation is proud to know that its products have played a part in the success of this progressive railroad.

TUCO NATIONAL ROOFING
TUCO SEAL
PLASTINAIL

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30 Church Street • New York, N. Y.

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Bolts also available with std. sq. nuts.

Used by 85% of America's Class 1 Railroads

SPECIFY SEALED-TITE ZINC COATING
Sealtite products sealed in zinc give twice the wear and greater economy by cutting expensive replacements. For Double-Life and freedom from corrosion, specify Hot-Dip Galvanized . . . Sealed in Zinc!

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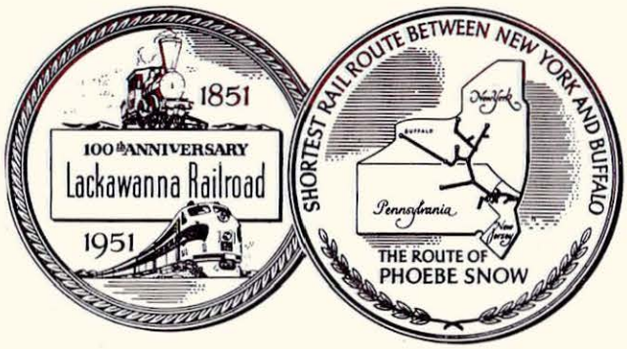


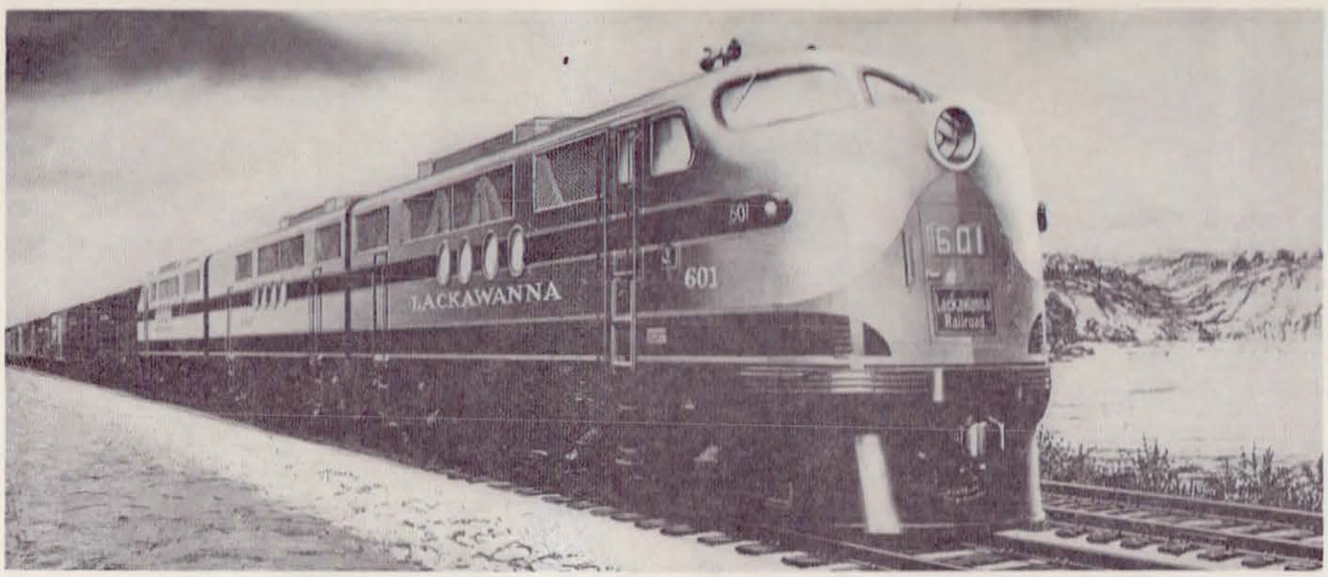
Cherished Associations

OUR organization congratulates the Lackawanna Railroad upon the completion of its first notable and significant century. We are happy to do this especially since the founder of our company, Frank Speno Sr., was a Lackawanna employee during the early days of President Samuel Sloan's administration. He enjoyed continued connections with the company for the rest of his life which extended down to the present administration. That fond association was a source of constant pride to him.

We express best wishes for continuance of good fortune to the Lackawanna.

Frank Speno Jr.

Pres., FRANK SPENO RAILROAD BALLAST CLEANING CO.



Westinghouse
Friction
Draft
Gear

CONGRATULATIONS, LACKAWANNA R. R.

on 100 Years of Progress

The Cardwell Westinghouse Co. has had the privilege of serving The Lackawanna Road for many years.

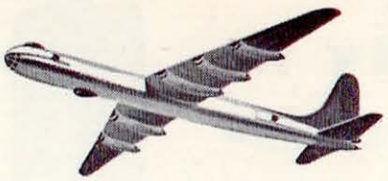
5744

CARDWELL

Friction Bolster Springs
. . for A. A. R. and
Long-Travel Springs.

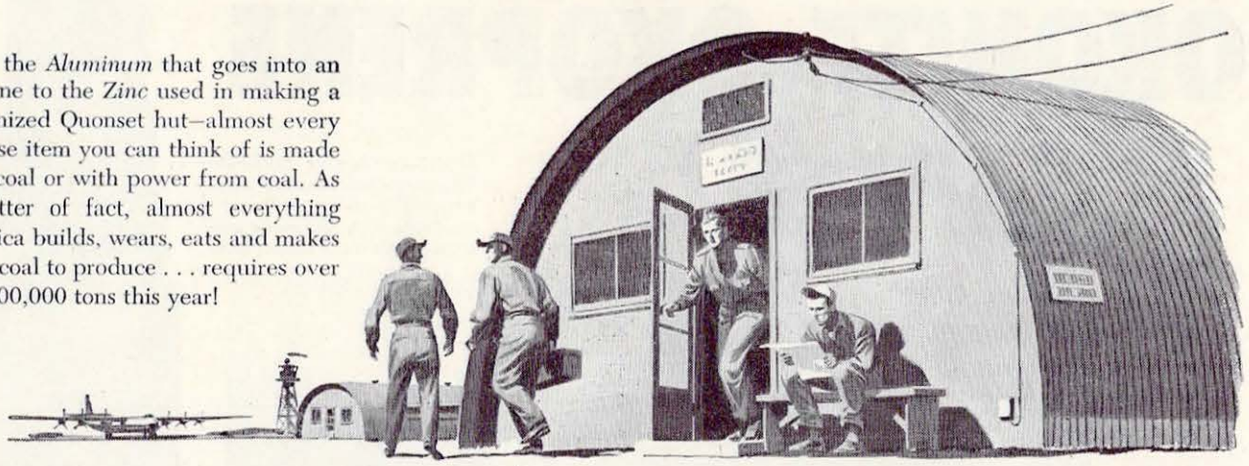
Over 98% of the cars in freight carrying service are A. A. R. construction and over 96% have Friction Draft Gears.

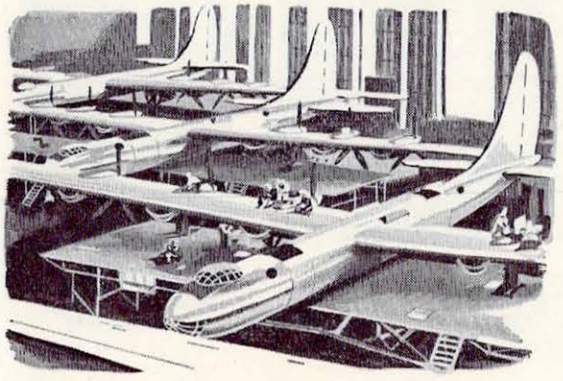
Cardwell Westinghouse Co., Chicago
Canadian Cardwell Co., Ltd., Montreal



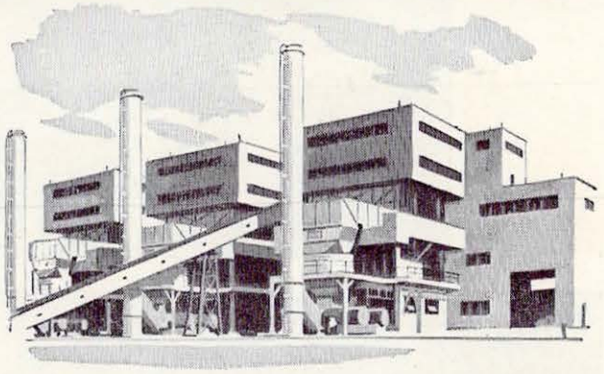
From A to Z it takes a lot of coal!

From the *Aluminum* that goes into an airplane to the *Zinc* used in making a galvanized Quonset hut—almost every defense item you can think of is made with coal or with power from coal. As a matter of fact, almost everything America builds, wears, eats and makes takes coal to produce . . . requires over 500,000,000 tons this year!

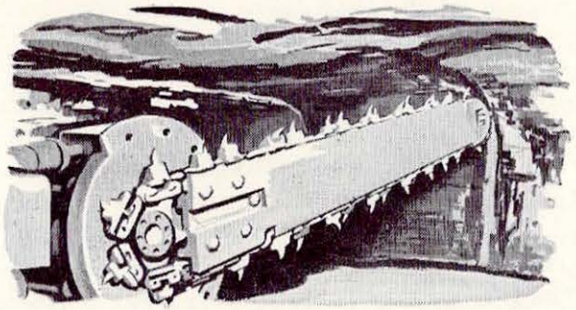




To get an idea of the extra demands that America's coal industry must meet today—look at one of these B-36's on the assembly line and you're actually looking at almost 200 tons of coal! For it takes more than a ton of coal to make every ton of aluminum that goes into one of these giant air-battleships, which, with equipment, weighs nearly 360,000 pounds.



Today's defense needs are on top of all coal used for every-day production by America's steel mills, railroads, public utilities, factories. Coal is America's No. 1 steam fuel because practically everywhere it's the most economical source of power. And today, automatic controls, automatic coal and ash handling apparatus are added reasons for making coal the preferred fuel when cost and dependability count.



The great cutting blade, above, is typical of the highly efficient machines that progressive private management has developed in both the mining of coal and its preparation for market. With a degree of mechanization found nowhere else in the world—America's mines have achieved an output that's unparalleled, too. *The efficiency of America's coal industry and America's vast coal reserves make it certain that coal will continue to be America's most economical and dependable fuel.*

To satisfy customers with an ever-better product, the managers of this country's 8,000 bituminous coal mines constantly strive to step up quality and cut costs. They have invested hundreds of millions of dollars in research—in modern mining equipment—and in developing new mine properties. As a direct result of this continuing program of improvement, the output per-man in America's coal mines today is more than 32% greater than in 1939. This is one of the greatest efficiency gains in all American industry and is bedrock proof that this nation can count on its privately managed coal companies for all the coal it needs to stay strong—to become stronger!

BITUMINOUS COAL INSTITUTE

A DEPARTMENT OF NATIONAL COAL ASSOCIATION

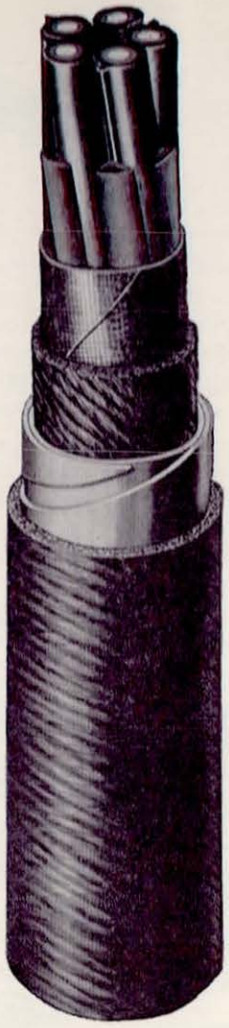
WASHINGTON, D. C.

FOR HIGH EFFICIENCY & FOR LOW COST

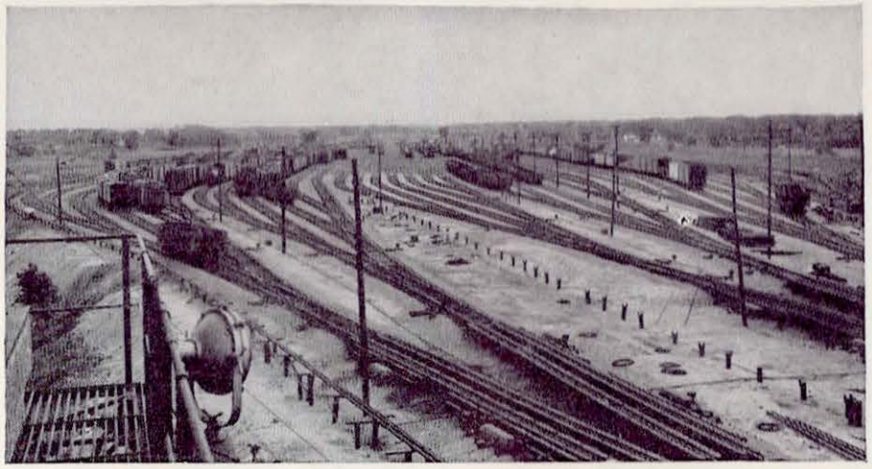
YOU CAN COUNT ON COAL!

for added reliability in modern classification yards-

OKONITE-OKOPRENE CABLES



Multi-conductor Okonite-Okoprene non-leaded steel-armored parkway cable (also available with Okoprene outer sheath instead of metallic armor).



Single conductor heavy-duty Okonite-Okoprene track wire.

Modern, electrified classification yards are the newest means for cutting down freight transit time. But dependable, integrated performance on classification yard track layouts requires the utmost reliability in the electrical cable used. That's why Okonite-Okoprene cables are the choice of many of America's leading railroads.

The heavy emphasis on time saving is one reason why Okonite-Okoprene track wire and parkway cable are being so widely specified. For Okonite-Okoprene—used above or underground—is the most reliable railroad cable ever developed. The likelihood of circuit failures, with consequent interruptions in service, reaches a minimum with Okonite-Okoprene.

Maintenance costs fall off, too, when control and operation circuits are handled by Okonite-Okoprene. That's because these cables are exceptionally strong, both electrically and physically. Okonite Insulation possesses an electrical stability which can be achieved only by the use of high quality rubber. The Okoprene Sheath resists moisture, heat and weather, as well as the oils, acids and chemicals common to soil in railroad yards.

For full details on how Okonite-Okoprene keeps retarders, switch machines, track circuits and signals in apple pie order, ask your Okonite representative. Or write today to The Okonite Company, Passaic, N. J.

THE BEST CABLE IS YOUR BEST POLICY

OKONITE SINCE 1878 *insulated wires and cables*

9478

RAILWAY AGE
EDITORIAL COMMENT

HOW TO MAKE PROFITABLE USE OF HISTORY

The question of the value to the railroads of appropriate celebration of their centennials arises again this week as the Lackawanna commemorates the centenary of the opening of its predecessor company—the Liggett's Gap Rail Road. For the management of a business, interest in industrial history could be either a deadly opiate or one of the most effective of tonics—depending upon the attitude of mind with which it is approached.

If events of the past are unearthed and reverenced simply because they happened a long time ago, the result is antiquarianism—the masculine equivalent of the expensive and time-wasting feminine lust for "antiques," often only creaky old furniture and cracked pottery, sometimes of commendable design or construction, but frequently with no merit except age. As the oldest of America's large industries, the railroads have, as a matter of course, devoted more attention than other industries to the commemoration of their ancient and honorable origins—and this paper has yet to see a single railroad management which, in studying and celebrating its past achievements, has been dominated by pride in what has gone on before, merely because of the fact that it happened long ago. Instead, the attitude has always been the constructive one of finding out what our predecessors did well, with the hope of holding ourselves, at least, up to their level of performance.

Differences and Similarities

There was hardly a one of these early railroads, and certainly not the Lackawanna, which was put together and got into operation without a tremendous outlay of imagination, courage, sacrifice and energy on the part of the pioneering organizers. There is nothing in the initial promotion of a business enterprise today which closely parallels the job which confronted the pioneer railroad builders. That is not the same thing as saying that there are no problems now in organizing a large new business—but the problems are different. Capital may be hard to attract, but it is not largely non-existent —on this side of the Atlantic, anyhow—as it was a century ago. On the other hand, the pioneers had no such problems of government interference and back-breaking taxation as confront industrial pioneers today.

As far as railroad management is concerned, today's difficulties are of an entirely different order from those of a century ago—but there is this similarity between the two periods, namely, that *the task of management is to enlist and organize internal resources in a manner sufficiently effective to overcome the hostile external forces which are always present to overwhelm the enterprise, be it old or new, which does not constantly combat these hostile forces.* Our nation has an enemy today who is different from the ones we had a decade ago, but none the less menacing. In the same way, railroad problems today are not less difficult because they are not the same ones which confronted the pioneers a century ago.

Plus and Minus Aspects

The pioneers got the early railroads going by successfully overcoming the hostile forces of inadequate capital, primitive equipment and limited traffic. The managements in the "in-between" period husbanded the resources made available by expanding traffic and earnings and used them—wisely for the most part—in developing and adapting to railroad use improved machinery and methods, ultimately providing this continent with the most complete and most economical transportation plant to be found anywhere on earth.

But the heritage present railroad managements got from the past has its minus side as well as its plus

aspect. About this minus side, too little has been said. The fact is, however, that practically every segment of the terrifying chaos of restrictive political control which now limits profitable railroad adaptation to a changing environment had its origin in some behavior of management in a by-gone day. Usually it was some abuse of power—sometimes real, but often merely apparent and provocative—and the result was inevitably a regulatory clause or a union restriction, frequently carelessly worded, which often has turned out to be a cure which is worse than the disease.

The predecessors of present railroad management were not supermen, and they could not have been expected to possess the foreknowledge required to avoid all the mistakes they made in the field of political and labor relations. Their record of originating and developing, out of nothing, what is physically the most magnificent transportation machine on the face of the earth is sufficient to justify all the encomiums that the present generation can bestow upon them. While we interest ourselves in studying and praising their achievements, however, let's also not neglect to profit from looking into such mistakes as they may have made. As much is to be learned from history about what to avoid as can be discovered there about what to do. Somewhere it is written that "our greatest treasure is the treasure of our mistakes."

The foregoing homily is, of course, not dedicated to the management of the Lackawanna. It would be hard to find a railroad organization in the country which is any more alert to the human and political problems of the railroad industry than President William White and his associates. It is precisely in this sphere where the kind of imagination and energy which first brought the railroads into being must operate most vigorously today, if the industry is going to have a future to match its brilliant past.

DIESEL SHOP DEFICIENCIES

One of the most noticeable facts associated with ever-expanding railroad use of diesel locomotives is the general lack of the right kind of facilities for servicing, maintaining and getting best all-around results with the new type of power. If memory serves, the period of greatest increase in size and capacity of steam locomotives was accompanied by a similar lag in facilities for maintaining them. Questions of transverse versus longitudinal back shops were still being argued and, quite often, larger locomotives were purchased and put in service before back shops were available, or before transfer tables and enginehouse turntables had been lengthened and strengthened enough to take care of them. In one instance, through some miscalculation, a railroad put a new class of steam locomotives in service which could not enter its main passenger station until several inches of additional clearance were provided for an exceptionally high smoke stack.

The ideas of railroad mechanical officers and locomotive builders about what kind of shop buildings and equipment are required for efficiently maintaining diesel power have pretty well jelled, and numerous examples of up-to-date diesel servicing and repair shops may be seen on different railroads. In general, however, there are not nearly enough of these modern facilities, and some railroads, already largely dieselized, have not yet decided, even, where diesel shops should be located on the line.

Consider for a moment the provision for light repairs and servicing diesel power with fuel, sand and water—work now being done daily around the clock at hundreds of locomotive terminals. A recent limited but representative spot check indicates that most facilities for this work are inadequate in one or more respects, and must limit to some degree the availability and net earnings of this remarkable new type of power.

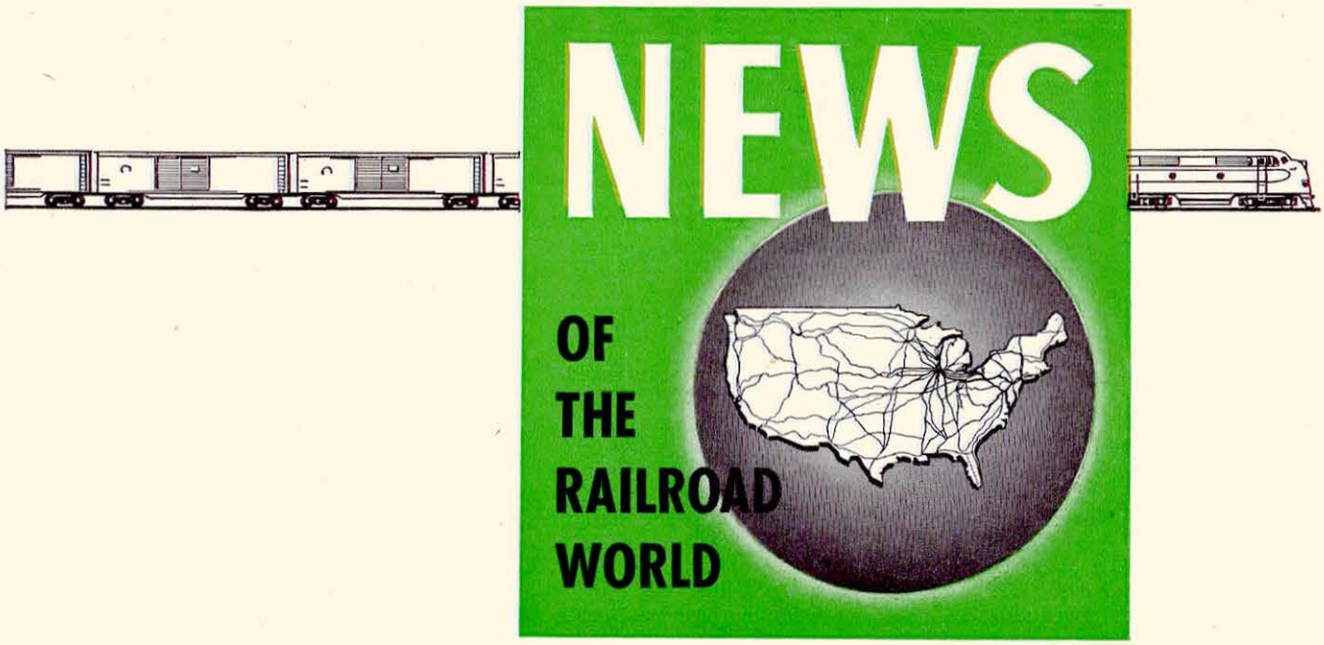
In correcting wheel and traction-motor defects, for example, diesel shops with drop-pit capacity to change more than one pair of wheels at a time are in the minority and an average of about three hours per pair of wheels is required, as compared with two hours to change a complete truck with proper facilities. This means something in lost availability when a multiple-unit diesel comes in with all wheels slid flat.

Similarly, diesel locomotives lose time and waste fuel at many fuel stations. Even where the set-up provides for fueling four units simultaneously, the pump capacity is often inadequate and almost as much time is required as for supplying one unit at a time. On fuel wastage, a book could be written. Leaky gaskets, ineffective sight gages which encourage filling tanks to the overflow point, and normal wastage on removing fuel hose nozzles from tanks no doubt account in the aggregate for large amounts of fuel loss.

Diesel power generally has to be sanded from both sides and requires two stops per unit to take care of this supply item. An alternative method now being tried with promising results is use of a power lift truck equipped with a sand box, which fills all sand boxes with the locomotive in one position while it is being fueled. In washing these locomotives, also, a great opportunity for improvement exists. Modern washing equipment which conserves locomotive time and saves manual labor and cost is an obvious need.

"When the little West Feliciana Railroad, now a part of the Illinois Central, issued the first freight tariff in America in 1836, folks in Louisiana were astounded. For the West Feliciana charged as little as three-quarters of a cent per mile for hauling 100 pounds of freight.

"These old-timers would have been more surprised at today's even lower freight rates. With prices as they are in these times, the Illinois Central last year averaged just one-thirteenth of the original West Feliciana rate."—*Wayne A. Johnston, president, Illinois Central, in an advertisement appearing in on-line newspapers during September.*



Net Income for 1951 Reaches $326 Million

Net railway operating income is $513.6 million; net income down from $372 million in 1950

Class I railroads in the first eight months of 1951 had an estimated net income, after interest and rentals, of $326,000,000, compared with $372,000,000, in the corresponding period of 1950, according to the Bureau of Railway Economics of the Association of American Railroads. The eight-months' net railway operating income, before interest and rentals, was $513,636,133, compared with $556,537,130.

Estimated results for August showed net income of $55,000,000, compared with $96,000,000 in the same month last year. Net railway operating income for the 1951 month was $80,881,476, while in August 1950 it was $122,343,180.

In the 12 months ended with August, the rate of return averaged 4.05 per cent, compared with 3.38 per cent for the 12 months ended with August 1950.

Gross in the eight months amounted to $6,762,632,765 compared with $5,885,664,117 in the same period of 1950, an increase of 14.9 per cent. Operating expenses amounted to $5,359,781,366 compared with $4,559,522,971, an increase of 17.6 per cent. For August, gross increased 2.3 per cent, and operating expenses increased 11.9 per cent, 1951 over 1950.

Twenty-three Class I roads failed to earn interest and rentals in the eight months, of which 12 were in the Eastern district, two in the Southern region, and nine in the Western district.

Class I railroads in the Eastern district in August had an estimated net income of $20,000,000 compared with $33,000,000 in August 1950. In the eight months, their estimated net income was $110,000,000 compared with a net income of $140,000,000 in the same period of 1950.

Their net railway operating income in August amounted to $33,186,911 compared with $45,818,945 in August 1950. Those same roads in the eight months had a net railway operating income of $215,570,945 compared with $235,933,096 in the same period of 1950.

Gross in the Eastern district in the eight months totaled $3,019,847,525, an increase of 14.6 per cent compared with the same period of 1950. Operating expenses totaled $2,447,979,207, an increase of 17.2 per cent.

CLASS I RAILROADS — UNITED STATES

	Month of August	
	1951	*1950*
Total operating revenues	$ 909,944,607	$ 889,796,085
Total operating expenses	700,651,363	626,264,865
Operating ratio—per cent	77.00	70.38
Taxes	110,726,003	126,197,664
Net railway operating income (Earnings before charges)	80,881,476	122,343,180
Net income, after charges (estimated)	55,000,000	96,000,000
	Eight Months Ended August 31, 1951	
Total operating revenues	6,762,632,765	5,885,664,117
Total operating expenses	5,359,781,366	4,559,522,971
Operating ratio—per cent	79.26	77.47
Taxes	752,009,833	651,181,004
Net railway operating income (Earnings before charges)	513,636,133	556,537,130
Net income, after charges (estimated)	326,000,000	372,000,000

South Holds Up Best

Class I roads in the Southern region in August had an estimated net income of $7,000,000 compared with $10,000,000 in August 1950. In the eight months their estimated net income was $60,000,000 compared with a net income of $62,000,000 in the same period of 1950.

Those same roads in August had a net railway operating income amounting to $10,817,015 compared with $14,064,884 in August 1950. Their net railway operating income in the eight months amounted to $90,3[illegible],477 compared with $90,473,231 in the same period of 1950.

Gross in the Southern region in the eight months totaled $954,214,169, an increase of 15.2 per cent compared with the same period of 1950, while operating expenses totaled $738,283,161, an increase of 17 per cent.

Class I roads in the Western district in August had an estimated net income of $28,000,000 compared with $53,000,000 in August 1950. Their estimated net income, in the eight months was $156,000,000 compared with $170,000,000 in the same period of 1950.

Their net railway operating income in August amounted to $36,877,550

compared with $62,459,351 in August 1950. Those same roads in the eight months had a net railway operating income of $207,712,711 compared with $230,130,803 in the same period of 1950.

Gross in the Western district in the eight months totaled $2,788,571,071, an increase of 15.1 per cent compared with the same period of 1950, while operating expenses totaled $2,173,518,998, an increase of 18.1 percent.

Reid Urges Better N. Y. Commuter Facilities

Asks more consideration of "necessary mass transportation," and end to "favoritism" for vehicular traffic

"It is time the states started thinking in terms of the many people who commute by rail to and from New York City every day to get to work, instead of providing more and more facilities for less than half that number who daily commute by car," William Reid, president of the Hudson & Manhattan, told the sixth Regional Plan Conference of New York's Regional Plan Association on October 9.

Introduced by R.P.A. President Paul Windels as "the lead-off man" in what the association "hopes will become a public debate" on the New York metropolitan area's passenger transportation facilities, Mr. Reid asserted "the problem has reached the critical stage and definitive and speedy action is needed. . . The longer the job is put off, the more complicated it will become."

Conceding that any solution "is going to take a great deal of money," the H. & M. president pointed out that "billions have been found to transport people on rubber and money will be found for proper mass transportation needs if the will to do so is present and a well-thought-out plan is prepared." To assist in development of such a plan, he called upon the Port of New York Authority, "with the complete backing of governmental officials," to "put its back into the job"; urged the railroads to "really cooperate"; and asked that the governors of New York and New Jersey "personally interest themselves to bring this job out from 'under the rug.'"

"It is," he declared, "a first duty of our responsible governmental agencies to help improve the rapid transit systems which are so necessary to the great masses of our people. Development of greater vehicular traffic facilities must be made secondary and must be kept in that proper but necessary relation to the mass transit system."

"Consideration Must Be Given..."

He suggested possible physical connections and some interchange of rolling stock between railroad commuter lines and city transit lines; and added, with respect to the general problem:

"Consideration must be given as to what, if any, governmental capital contributions should be made in construction of new facilities; as to what money contribution should be made, at a predetermined rate, for any loss on commutation travel; as to what assumption of capital cost should be made by donation of land for the broadening of service, and for tax relief for franchises and real property; and as to what outright government purchase of certain facilities should be made, the losses of which would be covered by general taxation."

Other excerpts from Mr. Reid's speech follow:

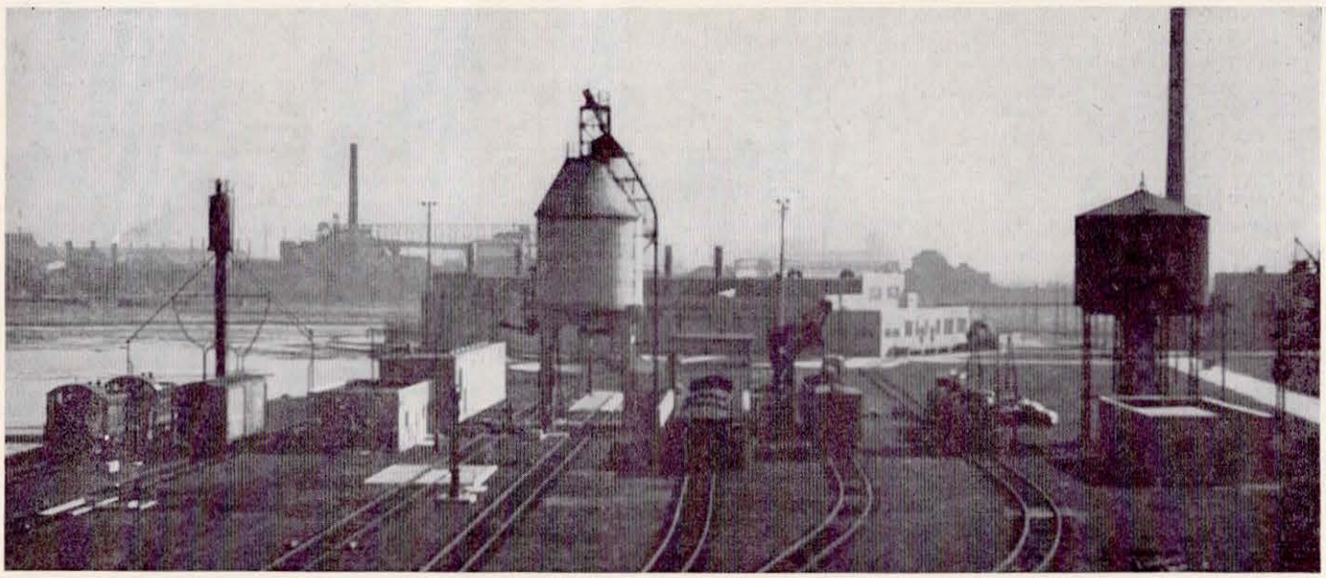
"How much longer can the states and their political subdivisions continue to pour billions of dollars into new highways, tunnels and bridges? . . . How much longer is the mass transportation problem going to be ignored?

"For . . . various reasons many privately operated commuter railroads are in no financial condition to improve their facilities and services. Some are rapidly reaching a point where they won't be able to pay operating costs. Every time fares are increased there is a very substantial drop in traffic and any increased amount received in revenue comes too late to meet increasing costs.

"Favoritism" Doesn't Help

"Certainly the millions who can't afford to travel by car are not helped by such favoritism. . . Despite this, the dizzy merry-go-round of spending more and more money continues on the part of the states, directly and indirectly, for highways, tunnels, bridges, etc., to accommodate automobiles and buses, but there is no attempt to provide decent mass transportation facilities for the majority of people who need but are not getting such facilities.

"Everyone comprising the traveling public is entitled to adequate transportation facilities, and since governmental resources are required to make this possible, they should be forthcoming, but no group favoritism should be shown. . . . Well-



THE NICKEL PLATE MADE A QUICK SWITCH of its terminal operations when it moved from its old Stony Island yard, Chicago, at 12:01 a.m., Sunday, September 30, to this new yard and terminal located two miles south at 103rd street. In the background (center) is a new eight-stall enginehouse, served by a 110-ft. turntable, and (right) a new power house with its 175-ft. stack. In the foreground, from left to right, are the diesel fueling and sanding facility, sand dryer house, coal dock and cinder-disposal plant for steam locomotives, and the water treating station with storage tank

informed persons know that great masses of people cannot be properly transported either by bus or by car.

"We have one great metropolitan area. State and city lines must be ignored when considering transportation needs in this area. All existing facilities must be pulled together and utilized. No independent lines can compete with city lines, farewise. That is an economic impossibility. Some privately owned lines are bound to end in financial chaos in the not-too-distant future, and, in the meantime, their facilities and service are bound to deteriorate.

"A Public Problem"

"This all leads to the inevitable conclusion that commuter railroads must also be acknowledged to be a public problem, just as vehicular river crossings were years ago. Every one who has given the matter any thought is aware of the importance of commuter service to the metropolitan area and of the need for service vastly superior to what we now have."

Canada Debates St. Lawrence Action

(Special to *Railway Age*)

Prospects for an early Canadian start on construction of the St. Lawrence seaway are still reported to be dark, in spite of unusual governmental activity in the past two weeks at Ottawa and elsewhere.

Prime Minister Louis St. Laurent has had talks recently with U.S. President Truman, Premier Leslie Frost of Ontario and Premier Maurice Duplessis of Quebec. The fall session of the Canadian Parliament is due to get down to business on October 15, and it is stated that Canada's prime minister wants to be able to tell Parliament at the outset that headway has been made on a seaway start. Also, a general election is to be held in Ontario on November 22 and Premier Frost of that province wants to be able to tell the voters he has gone all out to get a start on the scheme, because Ontario is still fearful of "brown-outs."

So far as Canada is concerned, there are two keys to the puzzle as to when the seaway can start, if ever — the U.S. Congress and its reaction to the latest pleas of President Truman for a joint international project, and the attitude of Premier Duplessis of Quebec. What President Truman wants is well known, but what Mr. Duplessis is actually prepared to do to cooperate with the federal government at Ottawa and with Ontario is not known, for Prime Minister St. Laurent has not fully disclosed the results of his talk with Mr. Duplessis. The latter is concerned only with power phases of the project; as this development is wholly within his province the question as to whether the seaway project is national or international reportedly does not interest him.

But Premier Duplessis' approval is essential even to the all-Canadian scheme, for the new Quebec power development would come from a dam across the St. Lawrence river just below Victoria bridge, which spans the stream from Montreal to the south shore; and that dam would affect the level of water for the Lachine lock system, the east end of which is in the harbor of Montreal and the west end at Lake St. Louis, about 10 miles west. Hence, the Dominion government would be unable to proceed with any improvement or enlargement of the Lachine locks, which are an essential link in the canal system between Montreal and the head of the Great Lakes, unless or until it knows whether Premier Duplessis is ready to go ahead with the power dam. The other dam in the international section would be at Cornwall, Ont.

Members of the Canadian cabinet reiterate that unless the U.S. is ready to cooperate Canada will go ahead on its own, but one minister admitted last week that whatever the outcome of negotiations in the next few weeks Canada would not be able to make a start within a year.

One factor that has strengthened the position of those who urge the seaway, whether national or international, is the grain blockade this year. Too many boats have had to be diverted into ore and other carrying, the result being a serious backlog of grain in the west, even after the new harvesting has begun. It is argued that elimination of reloading at Montreal and facilities to enable larger ocean ships to go through to Port Arthur

HOW THE LACKAWANNA WILL CELEBRATE

Official celebration of the centennial of the Delaware, Lackawanna & Western —which is the subject of five feature articles in this issue—was scheduled for October 13, 14 and 15, at Scranton, Pa., southern terminus of the predecessor Liggett's Gap Rail Road.

October 13 and 14 were "open house" days, when conducted tours were arranged through the railroad's various Scranton facilities, where both modern and historic equipment and tools were on display.

The program for October 15 calls for a re-enactment of the October 15, 1851, arrival at Scranton of the Liggett's Gap's first through train from Great Bend, Pa., with Lackawanna officers and employees, appropriately costumed, impersonating the original officers and directors. The re-enactment was timed to coincide with arrival from New York of a special train carrying the company's present managers (directors) and officers, with both groups to be officially welcomed by James H. Hanlon, mayor of Scranton. This was to be followed immediately by the unveiling by the Lackawanna Historical Society of a centennial plaque at the entrance to the Scranton passenger station, with Society President Thomas F. Murphy presiding.

On the evening of October 15 the same society and the Scranton Chamber of Commerce were to join in a centennial dinner in honor of the Lackawanna, with Governor John S. Fine, of Pennsylvania, William White, president of the D.L.&W., and Con McCole, former mayor of Wilkes-Barre, as the principal speakers. William H. Scranton, a descendant of Joseph H. Scranton, who was one of the founders of the Liggett's Gap, was to be toastmaster; while the chairman of the dinner was to be Ted V. Rodgers, Sr., president of the chamber of commerce and a past president of the American Trucking Associations. Descendants of founders of the railroad were to be guests of honor. During the dinner, a replica of the "Spitfire," one of the first locomotives on the Liggett's Gap, was to be presented to the historical society.

On October 16 Mr. White is to present another replica of the "Spitfire" to Ted Mack, master of ceremonies of the Original Amateur Hour; like the hour's radio program on October 11, its television program on October 16 is dedicated to Scranton and to the Lackawanna.

In recognition of its centennial the railroad has also had prepared the special medallion illustrated herewith, and special centennial banners in maroon, gray and gold.

and Fort William would greatly speed movement of grain overseas. Canada's big grain market still is in Europe, especially Britain.

Total estimated cost of the all-Canadian plan would be about $800,000,000, to be split equally four ways between the Canadian government, the province of Ontario, the province of Quebec and the state of New York. Critics of the scheme protest that it means Canada is to spend at least $200,000,000 to improve the free shipping facilities of the canal system for American, as well as Canadian use, as the canals are free of tolls. Another objection is that more traffic will be taken from Canadian railways, which move considerable grain, not only from the prairies to the head of the lakes, but also, during winter months, to seaboard.

Packaging Show Biggest Ever

At its annual meeting, held in Cleveland's public auditorium, October 1-4, the Society of Industrial Packaging and Materials Handling Engineers had the largest attendance — and number of exhibitors — in its history. The "school" for members and guests was run this year by Case Institute of Technology, and featured many prominent packaging and materials handling engineers.

As usual at these shows, one of the outstanding features was the packaging contest, where packaging engineers compete for honors — and monetary prizes — in several packaging classifications. E. J. Dahill, chief engineer of the Freight Loading and Container Section of the Association of American Railroads, was one of the judges in the "nailed wood boxes and crates" group.

A number of railroad freight claim and loss and damage prevention men attended the show.

Rail-Truck Freight Haul Data Compared by Faricy

Railroads in the United States move more tons of freight more miles between cities than all other forms of commercial transportation combined, William T. Faricy, president of the Association of American Railroads, said in Miami, Fla., on October 7. Addressing the annual convention of the National Exchange Club, Mr. Faricy said that, counting both tonnage and distance, railroads last year produced five times as much intercity freight transportation service as motor trucks — contract and private carriers as well as common carriers.

Mr. Faricy stated it might be true that other forms of commercial transportation haul more tonnage than railroads if the comparis- is confined to tons and omits the equally essential factor of distance, thus regarding the movement of a ton a few city blocks the same as moving ton a thousand or more miles.

Because railroads are so vital to national def-nse, Mr. Faricy conceded they would be primary targets in event of enemy action, but he pointed out that "one of the outstanding lessons learned in World War II was that a railroad is hard to knock out and a network of railroads is almost impossible to put out of action."

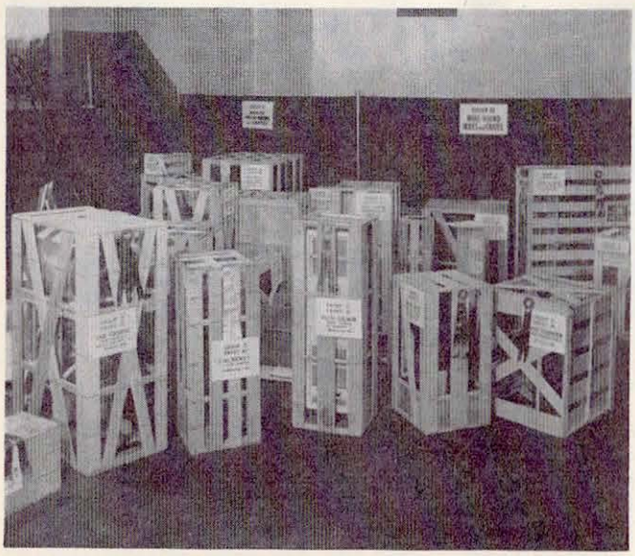
"Enemy bombs would place extreme demands upon all forms of transport," the A.A.R. president continued, "but whereas traffic on most channels of transportation is individually operated and largely uncontrollable, particularly in time of emergency, traffic on railroads would continue to move under the disciplined control of railroad operating organizations. Railroads are organized to meet emergencies through flexibility and availability of alternative routes, under arrangements which are well established and thoroughly understood. Even so disastrous an interruption to traffic as the recent Kansas-Missouri flood, or the great Ohio River flood of 1937, both of which far exceeded any likely interruption by man-made destruction, did not prevent railroads from carrying on, through their coordinated network of tracks, the major flow of commerce."

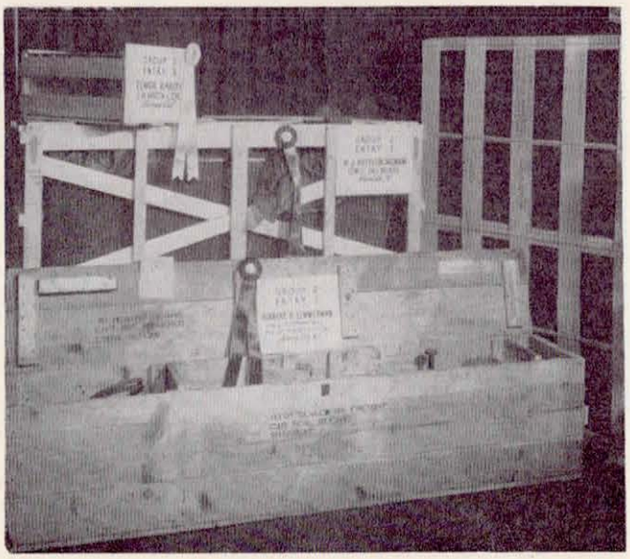
Mr. Faricy said the two main problems facing the railroads today are those of making ends meet and obtaining materials and supplies necessary to keep in physical trim. Declaring that "disparity between levels of income and outgo make impossible the earnings which alone can keep privately operated railroads in the vigor which national needs require," Mr. Faricy said "the answer is to be found in rates realistically related to today's costs and today's prices."

Eight Railway Officers In School at Harvard

Eight railway officers are presently attending the three-month "advanced management program" at Harvard Business School, which was described in an illustrated article in *Railway Age* April 9, page 38.

This educational program—designed for business and industrial executives who have already made considerable progress in attainment of important





Left—In the wirebound boxes and crates section of the packaging contest, M. C. Downs, Jr., of the American Locomotive Company, Schenectady, N. Y., received honorable mention for packaging a diesel-engine cylinder head (extreme left). Next to Mr. Downs' package is that of the first prize winner, Earl Forsberg of the Ohio Chemical & Surgical Equipment Co., Madison, Wis., whose packaging of a sterilizer was deemed the best in the class. Right—In the nailed wood boxes and crates class, H. H. Lemmerman of the Airco Equipment Manufacturing Division of Air Reduction, Inc., Jersey City, N. J., took first prize (front) with his box containing an Airco Monograph, oxy-acetylene cutting machine

positions and who give promise of further progress—has been described as a "supercharge of managerial 'know-how'." The participants, in the usual course, reside together in a regular college dormitory; and are given the assignment from the managements of their companies. A wide range of industries is represented, as are also the armed services and several foreign countries.

The delegation from the railway industry in the current course consists of William R. Gerstnecker, assistant to treasurer, Pennsylvania; Claude P. King, vice-president, personnel, St. Louis-San Francisco; Edward B. Kysh, first assistant manager, personnel, Southern Pacific (Texas & Louisiana lines); Glenn C. Lace, assistant to vice-president, Railway Express Agency; Eugene D. Moody, assistant general manager, Southern Pacific (Pacific lines); Harry C. Munson, vice-president and general manager, Western Pacific; Harry C. Schmidt, assistant vice-president (traffic), Delaware, Lackawanna & Western; and John W. Smith, vice-president (administration), Seaboard Air Line.

Southern Roads Get Passenger-Fare Raise

The Interstate Commerce Commission has approved, for Southern-territory railroads, increased interstate passenger fares which will establish a one-way coach rate of 2.75 cents per mile and a one-way rate of 3.85 cents per mile for travel in sleeping and parlor cars. Comparable present rates are 2.5 cents and 3.5 cents, respectively.

The present fare structure also includes the military furlough rate of 2 cents per mile which will not be increased.

As to regular round-trip fares they will be increased to 180 per cent of the new one-way basis. This will put them on bases approximating 2.475 cents per mile for travel in coaches and 3.465 cents per mile for travel in sleeping and parlor cars. Also, the minimum one-way fare (now 15 cents) will be raised to 25 cents, and will apply to half fares as well as whole fares. Excess-baggage charges will be increased by applying the present excess-baggage scale to the increased one-way basic fares for transportation in sleeping and parlor cars.

Establishment of the increases on five-days notice was also authorized by the commission's order. The case was docketed as No. 30822, and the petitioners were 26 railroads operating in Southern territory. The Illinois Central, the Gulf, Mobile & Ohio, and the St. Louis-San Francisco were not parties, in which connection the commission noted that a "large portion" of the mileage of those roads is outside Southern territory.

The petitioners advised the commission that they planned to seek intrastate increases in line with the new interstate basis; and in that connection they asked for an order giving them authority to raise Illinois intrastate fares which were formerly subject to a statutory maximum. As to that, the commission noted that the Illinois law had been repealed since the petition was filed. "There is," it added, "no basis upon this record to enter such an order since jurisdiction over fares which exceed two cents per mile has been vested in the Illinois commission."

The approved new interstate scale was that proposed by the carriers. The commission found it "just and reasonable," and it called the increases "moderate as compared with increases which have taken place in the prices of services and commodities generally since the last increases in passenger fares were authorized."

Eighteen of the 26 petitioners were class I roads. The commission's report reviewed evidence which indicated that the passenger-service deficit of the 18 amounted to $63 million for 1950.

INADEQUATE RAIL EARNINGS PERIL DEFENSE, SAYS METZMAN

"With earnings at the meager levels presently allowed the railroad industry it is impossible to set aside sufficient money for needed expansion, or to attract into the industry the investment funds to finance the large-scale betterment programs that should be carried out," Gustav Metzman, president of the New York Central, said in Boston on October 9. Addressing the New England Railroad Club, Mr. Metzman added: "Inherent in this financial malnutrition which is being forced upon our railroads is a threat to the very security of the nation."

Rail transportation, he continued, is vital to every phase of the nation's defense production program, because "only with strong railroads can we sustain the gigantic defense effort which circumstances have forced upon us. Unless railroad earnings are allowed to go above the unrealistically low level to which they are now held, our industry is heading for a collision with one of the basic facts of business life. An enterprise cannot continue to expand without adequate profits. And, at present rates of profit, railroads will not be able to carry out the expansion and improvements needed for them to perform their function in the defense program, or, for that matter, to do their job under normal peacetime conditions."

Amortization Certificates Awarded to Nine Roads

The Defense Production Administration has awarded certificates of necessity for accelerated tax amortization of facilities to nine more railroads. D.P.A. said these were approved during the September 10-20 period.

Under the Revenue Act of 1950, which set up the accelerated tax program, a taxpayer was given until September 23, 1951, to obtain certificates on facilities completed or acquired between December 31, 1949, and September 23, 1950. When D.P.A. recently set a 60-day moratorium on fast write off certificates, an exception was made for facilities within this category.

D.P.A.'s latest listing of certificates shows that eight of the nine roads had to meet the September 23 deadline. The agency gave neither the name nor cost of the facilities covered by the various certificates, but did state that each road is authorized to write off 65 per cent of the costs.

The eight roads were: Atlantic Coast Line; Atlanta & West Point; Bessemer & Lake Erie; Cincinnati, New Orleans & Texas Pacific; International-Great Northern; Maine Central; Missouri-Kansas-Texas; and Nashville, Chattanooga & St. Louis.

The Lake Terminal Company, Lorain, Ohio, was the ninth road. It was authorized to write off 65 per cent of facilities costing $518,795. D.P.A. has made exceptions to its general moratorium when facilities are "urgently required" in the defense program.

Caterpillar Strike Ends

The longest strike in the history of the Caterpillar Tractor Company, Peoria, Ill., ended with the plant resuming operations on October 1, following the granting of a 13½-cent-per-hour wage increase to all employees, plus a cost-of-living escalator clause. More than 22,000 production employees were idle during the 60-day strike. By the end of the first week of operations, the plant was producing at full capacity.

MORE NEWS ON PAGE 107

Additional general news appears on page 107, followed by regular news departments, which begin on the following pages:

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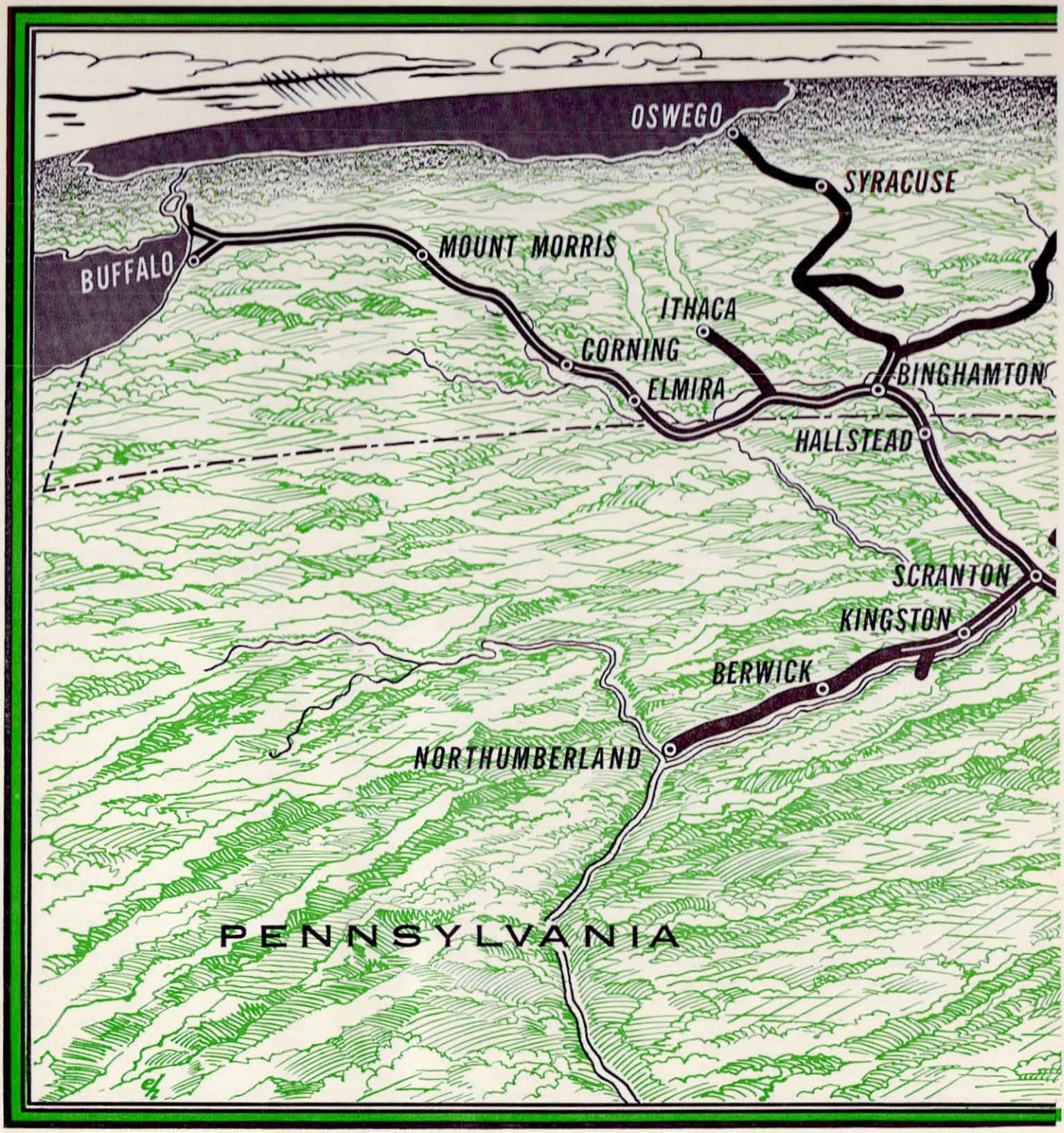
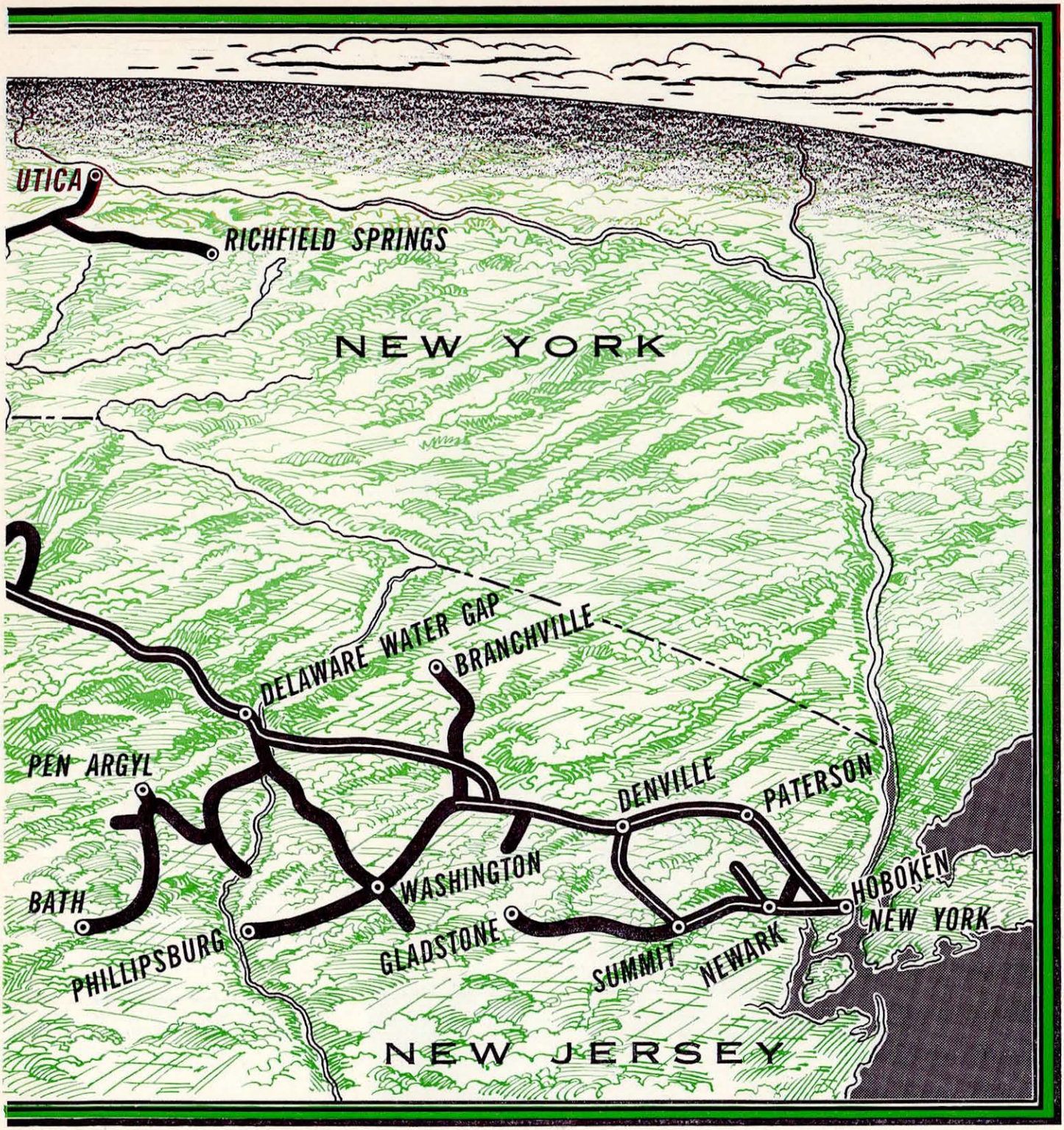


The Lackawanna Looks Back on 100 Years

October 15 marks centennial of Liggett's Gap Rail Road, predecessor of present 966-mile D. L. & W. system

Slocum's Hollow had coal. Slocum's Hollow had iron ore. Welsh immigrant John F. Davis knew how to use the coal to transmute the ore into commercial iron. George and Selden Scranton, and their various part-



ners, had the money. Selden's father-in-law, William Henry, had options on coal and iron land. And the New York & Erie needed rails.

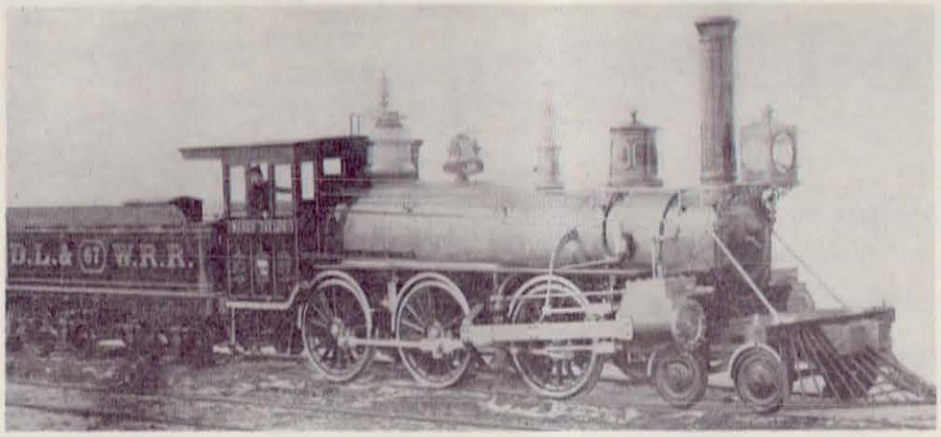
That combination of seemingly unrelated circumstances led to the beginning of what is now the highly developed 966-mile Delaware, Lackawanna & Western Railroad Company, which celebrates today—October 15—the one hundredth anniversary of the opening of its little predecessor, the Liggett's* Gap Rail Road.

Much history had been made, of course, before the tiny wood-burning "Wyoming" pulled the first train over the 53½ miles of 56-lb. rail between Great Bend, Pa., and Slocum's Hollow (now Scranton).

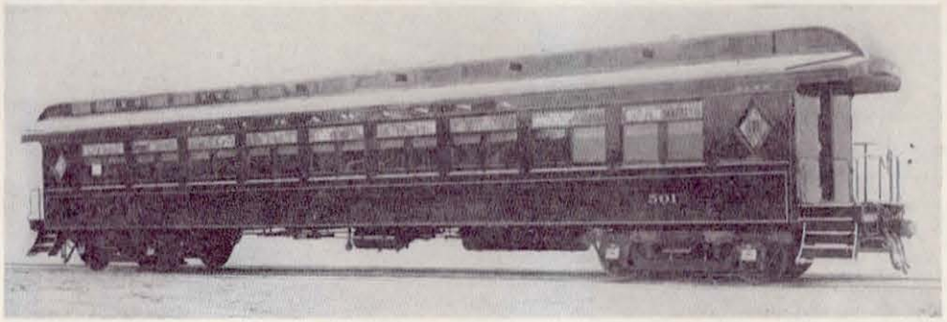
The Lackawanna and Wyoming valleys of northeastern Pennsylvania, in the first of which Scranton is located, had been the scene of some of the darkest pages of colonial history—pages so dark that the valley remained a virtual wilderness until 1819, when one Henry Drinker, a former surveyor-general of Pennsylvania, built a turnpike from the Delaware Water Gap to Tobyhanna, about half-way to Scranton, to open up to settlement land which he owned in the neighborhood.

Among the many who migrated into the valley follow-

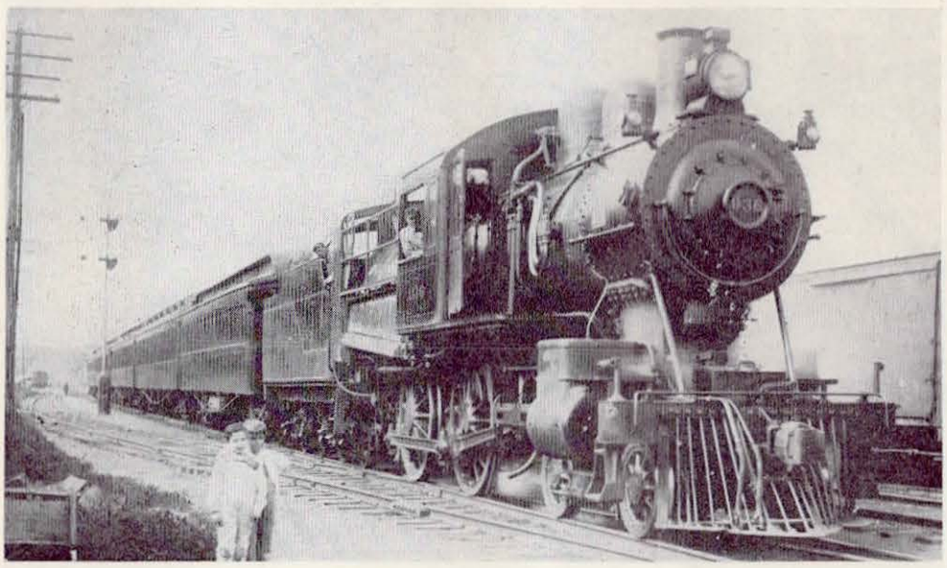
*Historical records show almost every conceivable spelling of "Liggett's"—those most commonly found are "Liggett's," "Leggett's" and "Liggitt's." The spelling used throughout this issue—"Liggett's"—is the one currently favored by the Lackawanna.



Delaware, Lackawanna & Western locomotive No. 67, the "Moses Taylor," one of the typical early standardized anthracite coal burners, which was built by Danforth, Cooke & Co., late in 1859



One of the Lackawanna's first all-steel passenger cars—a suburban coach built by the American Car & Foundry Co. at Berwick, Pa., in 1911



A local passenger train in the New Jersey suburban area prior to the 1930 electrification

ing the building of Drinker's turnpike were Thomas Meredith, surveyor, and the previously mentioned William Henry, geologist. It was Meredith, apparently, who conceived and suggested to Drinker the idea of a railroad from the virtually untapped coal lands northward into the already populous and prosperous agricultural area of southern New York, only 50 miles, more or less, from Drinker's property and another 50 or so from Lake Cayuga, over which boats could be sailed to the Mohawk river and the Erie canal. On May 11, 1831, a "railroad convention" was held at Ithaca, N. Y., and in the following year Drinker obtained a charter for construction of the Liggett's Gap Rail Road along a route proposed and surveyed by Meredith.

About the same time, Drinker, either on his own initiative or at the suggestion of others, conceived the idea of, and chartered, a second railroad from a point in the vicinity of modern Scranton or Wilkes-Barre to the Delaware Water Gap, and a third, never built, from Pittston to the New York state line. But as of the early eighteen-thirties, no capital could be found for any of the three roads; so far as Drinker was concerned, the depression of 1835-37 put a stop to his railroad building plans.

But while Drinker had been unsuccessfully trying to raise capital for one or more of his three railroads, Geologist William Henry had been quietly taking up options on coal- and iron-bearing lands. In the same years, George and Selden Scranton had been establishing themselves as coming young business men over in neighboring northern New Jersey. And when, in 1837, Selden married William Henry's daughter, and in 1838 Selden and George together purchased Maurice Robeson's Oxford Furnace and set themselves up in the nail-making business, the combination of circumstances that was to result in the Lackawanna Railroad had begun to take recognizable shape.

It was in 1840 that Henry convinced the Scrantons and their partner, Sanford Grant, of the value of the coal and iron lands on which he held options. It was a year later that they completed their first furnace at Slocum's Hollow. But it was not until 1842, and then only after they had found the Welsh furnaceman, John Davis, that they were able actually to make iron in commercial quantities.

But in 1842 Slocum's Hollow was still a long way, by wagon and canal, from the eastern seaboard, where lay the only important market for iron products. Transportation difficulties alone might well have sounded the death knell of the new Pennsylvania iron foundry. And then the Erie—which celebrated, just last May, the centennial of the completion of its own original line—came to their rescue.

That railroad—known then as the New York & Erie—was struggling desperately to complete its Delaware division, from Port Jervis, N. Y., to Binghamton, in time to win a $3 million grant from the state of New York. It needed rails, thousands of tons of them, and it was unable to get them from England, previously the only available source. The result of its need was a contract, and then another, and then a third, to Scrantons-Platt Company (successors to Scrantons, Grant) for rails, at as much as $85 per ton, to be delivered to the Erie railhead.

The Liggett's Gap Is Built

From making rails to building railroads was a short and natural step, especially with the N. Y. & E. reaching out to within striking distance of Scranton, and ready to permit use of its tracks into the growing towns of Binghamton and Owego. In 1847, the Scrantons purchased the charter of the old Liggett's Gap line, which had been renewed every five years by farsighted Dr. Andrew Bedford. In 1849, at a March 7 meeting in Scranton, 5,026 shares of stock were subscribed for, at $50 per share. At another meeting, on January 2, 1850, John J. Phelps, of New York, was elected president; and at a third meeting, on March 27, 1850, George Scranton was appointed general agent and builder of the road.

Construction got under way almost at once, with Major Edwin McNeil, experienced on both the Baltimore & Ohio and the Philadelphia & Reading, as chief engineer, and David Dotterer, of the Reading, Pa., engine building firm of Dotterer & Darling, as mechanical superintendent.

Without in any way belittling the difficulties which beset all early railroads, construction of the Liggett's Gap was, relatively, both easy and fast; supplies—especially rail—were readily available, and with New York financiers behind it, the road had none of the early financial problems which beset so many of its contemporaries. The first through train was run, as stated above, from the New York & Erie connection at Great Bend—which, on the Lackawanna, is now Hallstead, Pa.—to Scranton and return on October 15, 1851; regular service was inaugurated on October 20 with a daily passenger train and as many freight trains as were needed to handle the available business. For each type of service three locomotives were available—the "Lackawanna," "Tunkhannock," and "Capouse" for freight, and the "Wyoming," "Montrose," and "Abington" for passenger — all built by Rogers, Ketchum & Grosvenor, of Paterson, N. J., and all a considerable improvement on the "Old Puff" (officially "Pioneer") and "Spitfire" which had been used during construction.

Phoebe Snow, from the painting by Penrhyn Stanlaus

Expansion Begins

Expansion of the Liggett's Gap into the modern D.L. & W. had begun even before its completion. On April 14, 1851, almost exactly six months before its first through train was run, its name had been changed to Lackawanna & Western. And as early as 1848, even before construction of the Liggett's Gap was definitely assured, George Scranton had gotten into the railroad business through personal acquisition of the Cayuga & Susquehanna. His partner in this venture was William E. Dodge, of New York, who, as director and purchasing agent of the N.Y. & E., had been instrumental in securing from that company rail contracts for Scrantons-Platt.

The 27-mile Cayuga & Susquehanna—actually the oldest portion of the present D.L. & W. and now that company's Ithaca branch—was the second railroad to be incorporated in New York state. Chartered in 1828 as the Ithaca & Owego, to run between those two towns, it had been completed in 1834; had been sold, and had its name changed, in 1842; and had generally led such a checkered existence that only its right-of-way made it worth its 1848 purchase price. Some seven times that price, in fact, had to be poured into rebuilding it —a job completed in December 1849. But with the opening of the Liggett's Gap, the Scranton-Dodge purchase of the C. & S. proved to be a good investment,

At Scranton, Pa., hub of the Lackawanna—a formidable collection of steam power of a few years ago

for with N.Y. & E. trackage rights between Great Bend and Owego, and the navigable waters of Lake Cayuga, it provided a through route for coal and iron from Scranton to middle and northern New York. On April 21, 1855, the Cayuga & Susquehanna was leased in perpetuity to what had by then become the Delaware, Lackawanna & Western.

Delaware & Cobb's Gap

While these developments had been transpiring to the north and west of Scranton, others of equal importance had been taking place to the south and east. Railroads—the Central of New Jersey and the Morris & Essex—were being pushed westward across New Jersey from tidewater in the New York area toward the Delaware river; the eastern seaboard, to which these lines gave potential access, was looming larger and more important as a possible market for Pennsylvania coal and iron. In 1849, therefore, a charter was obtained from Pennsylvania for construction of the Delaware & Cobb's Gap Railroad from the vicinity of Scranton to the Delaware Water Gap. This was, in effect, the second of the three lines dreamed of earlier by Henry Drinker; to protect itself, the new company bought up his original charter, and followed substantially the route determined by his second survey.

Financial backers of the D. & C.G. were essentially the same men who were behind the Liggett's Gap—George and Selden Scranton; their cousin Joseph and their partner Joseph C. Platt; George Scranton's associate in the Cayuga & Susquehanna, William E. Dodge; Dodge's father-in-law and partner, Anson G. Phelps; the same John J. Phelps who was the first president of the Liggett's Gap, and the redoubtable John I. Blair, who had given the Scrantons their start in life, and for whom Blairstown, N. J., is named.

With common financial backers, and a common terminal at Scranton, consolidation of the two railroads could never have been much more than a matter of time and convenience; it took place in March 1853, when the old Liggett's Gap (by then the Lackawanna & Western) was consolidated with the Delaware & Cobb's Gap, to form the Delaware, Lackawanna & Western. And when the D. & C.G.—or, more correctly, the Southern division of the D.L. & W.—was opened to traffic in May 1856, the D.L. & W. had a through line under common ownership from the Delaware river at Delaware Water Gap to the Susquehanna river at Great Bend.

The consolidated D.L. & W. still faced, of course, the problem of making an actual physical connection between its own southern terminal at the Water Gap and one of the two New Jersey railroads. But John I. Blair speedily solved this problem by incorporating (1851), building (1855-56), and immediately leasing to the Lackawanna, the 18-mile Warren Railroad, from Water Gap to a connection with the Jersey Central at New Hampton (now Hampton), N. J. Construction of this little line—chartered and built against determined opposition from the Morris & Essex—made it possible to put into effect a previously prepared agreement with the C.N.J., under which the latter would carry Lackawanna traffic from New Hampton to tidewater at Elizabethport for a flat rate of 1¼ cents per ton-mile for use of its road and motive power. The New Jersey Railroad (now part of the Pennsylvania) agreed to

MORRIS & ESSEX DIVISION
NEW YORK TO ORANGE, SUMMIT, MORRISTOWN, DOVER AND INTERMEDIATE STATIONS—ELECTRIFIED SERVICE

MONDAY THROUGH FRIDAY, EXCEPT HOLIDAYS

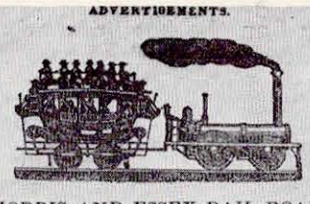
(See Holiday Note Page 33)

STATIONS	609	NB 507	NB 611	409	NB 509	NB 613	511	NB 615	NB 513	621	NB 517	627	NB 521	629	NB 209	NB 631
New York	AM	AM	AM	AM	AM	AM	AM	AM	PM	PM	PM	PM	PM	PM	PM	PM
Barclay St. Lve.	8 43	9 10	9 43	9 43	10 13	10 43	11 13	11 43	12 13	12 43	1 13	1 43	2 13	2 43	3 15	3 30
Christopher St....	8 40	9 17	9 47	9 47	10 20	10 48	11 12	11 47	12 18	12 46	1 17	1 42	2 17	2 42	3 15	3 32
Hoboken	9 00	9 30	10 00	10 05	10 35	11 00	11 30	12 00	12 30	1 00	1 30	2 00	2 30	3 00	3 30	3 45
Harrison														f3 11	3 41	
Newark	9 13	9 43	10 13	10 18	10 48	11 13	11 44	12 13	12 43	1 14	1 43	2 13	2 43	3 13	3 43	3 58
Roseville Avenue..	9 16	9 46	10 16		10 51	11 16	11 47	12 16	12 46	1 17	1 46	2 16	2 46	3 16	3 46	
Grove Street	9 17	9 47	10 17		10 52	11 17	11 49	12 17	12 47	1 18	1 47	2 17	2 47	3 17	3 47	
East Orange	9 19	9 49	10 19	10 23	10 54	11 19	11 51	12 19	12 49	1 20	1 49	2 19	2 49	3 19	3 49	
Brick Church	9 21	9 51	10 21	10 25	10 56	11 21	11 53	12 21	12 51	1 22	1 51	2 21	2 51	3 21	3 51	
Orange	9 23	9 53	10 23	10 28	10 58	11 23	11 56	12 23	12 53	1 25	1 53	2 23	2 53	3 24	3 53	
Highland Avenue..	9 25	9 55	10 25		11 00	11 25	11 58	12 25	12 55	1 27	1 55	2 25	2 55	3 26	3 55	
Mountain Station	9 27	9 57	10 27		11 02	11 27	12 00	12 27	12 57	1 29	1 57	2 27	2 57	3 28	3 57	
South Orange	9 29	9 59	10 29	10 32	11 04	11 29	12 02	12 29	12 59	1 32	1 59	2 29	2 59	3 30	3 59	4 07
Maplewood	9 31	10 01	10 31	10 35	11 06	11 31	12 04	12 31	1 01	1 35	2 01	2 31	3 01	3 33		4 10
Millburn	9 34	10 04	10 34	10 38	11 09	11 34	12 07	12 34	1 04	1 38	2 04	2 34	3 04	3 36		4 13
Short Hills	9 36	10 06	10 36	10 40	11 11	11 36	12 09	12 36	1 06	1 40	2 06	2 36	3 06	3 39		4 16
Summit	9 40	10 10	10 40	10 50	11 15	11 40	12 14	12 40	1 10	1 45	2 10	2 40	3 10	3 44		4 21
Chatham	9 46	10 16	10 46		11 21	11 46	12 20	12 46	1 16	1 51	2 16	2 46	3 16	3 50		4 27
Madison	9 49	10 19	10 49		11 24	11 49	12 23	12 49	1 19	1 54	2 19	2 49	3 19	3 53		4 30
Convent	9 53	10 23	10 53		11 28	11 53	12 27	12 53	1 23	1 58	2 23	2 53	3 23	3 57		4 34
Morristown	9 57	10 27	10 57		11 32	11 57	12 31	12 57	1 27	2 02	2 27	2 57	3 27	4 01		4 38
Morris Plains	10 01		11 01			12 01		1 01		2 06		3 01		4 05		4 42
Mount Tabor	10 07		11 07			12 07		1 07		2 12		3 07		f4 11		4 48
Denville	10 09		11 09			12 09		1 09		2 14		3 09		4 13		4 50
Dover Arr	10 15		11 15			12 15		1 15		2 20		3 15		4 21		4 56

For Additional Trains New York to Newark and Roseville Avenue, See New York and Montclair Trains, Pages 18, 19
For Trains to Points West of Dover, See Boonton Line Trains, Pages 25, 26

EXPLANATION REFERENCE MARKS SEE PAGE 33.

Six lines and six pages! A little over one hundred years ago, it took the Morris & Essex just six lines of type to show its complete daily schedule between New York and Morristown. Today, the modern Lackawanna requires six pages like the one above to show its daily service over the same route



MORRIS AND ESSEX RAIL ROAD.

This road was Chartered January 29th 1835, and the Company commenced running their cars by horse power, from Newark to Orange November 19th 1836, from Newark to Madison by steam power on Monday the second of October, 1837; and from Newark to Morristown, on the first day of January, 1838; March 1st, 1842, an act was passed by the Legislature for the relief of this road, and on Monday 18th April, 1842, the road was sold—and the purchasers began to lay the Iron Rails down the middle of September, and finished the middle of January 1843, being only 18 weeks—and now run through in one hour thirty minutes, as follows, viz:

SUMMER ARRANGEMENTS.
NEW-YORK, MORRISTOWN AND SCHOOLEY'S MOUNTAIN.

Leave Morristown,	Leave New York.
6½ o'clock, A. M.	8 o'clock, A. M.
2 o'clock, P. M.	4 o'clock, P. M.

Leave Newark for Morristown at 9 A. M., and 5 P. M.

Passengers by the Morning train to Morristown will arrive there at 10½ o'clock, where stages will be in readiness to convey them to Schooley's Mountain, Washington, Belvidere and Easton; also to Stanhope, Sparta, Newton, Milford and Owego.

Passengers from Morristown, will arrive in Newark in time to take the trains for Philadelphia.

William Wright, *President*,
Beach Vanderpool, *Treasurer*.
J. C. Garthwaite, *Secretary*.
Directors—Lewis Condict, Stephen Vail, Jonathan Parkhurst, Daniel Babbit, Stephen D. Day, Joel W. Condict, Beach Vanderpool, William Wright.
Ira Dodd, *Superintendant*.

handle traffic from Elizabeth to New York (Jersey City) under similar conditions. The first of these agreements—under which the C.N.J. had to lay a third rail to accommodate the Lackawanna's 6-ft. gage cars—remained in effect until 1875; it led, in 1872, to an abortive effort to consolidate the two companies. The wide gage, incidentally, adopted because of the original Erie connection, was not changed to standard until 1876.

East on the Morris & Essex

While all this was going on, the Morris & Essex had in turn been expanding steadily, if somewhat erratically, westward. Chartered by a group of Newark men in 1835, as a horse railroad from Newark to Morristown, it was opened to Orange in 1836, converted to steam power the next year, and completed to Morristown in January 1838. Ten years later it was extended nine miles to Dover; in 1854 another 20 miles to Hackettstown; and by 1865 to Phillipsburg, N. J., on the Delaware river, connecting in the process with the Lackawanna. It had for a time grandiose plans of pushing on through the coal regions to Williamsport, Pa.; and was an object of considerable interest to the Atlantic & Great Western (now part of the Erie), whose constantly optimistic owners envisioned use of the M. & E. as the eastern end of a proposed trunk line from Dayton, Ohio, to New York—a plan which the perpetually shaky finances of the A. & G.W. made impossible of fulfillment.

As a local line, the M. & E. had enjoyed a relative degree of prosperity after it had survived its first few critical years. But the westward extension, plus an 1867 eastward extension from Newark to Hoboken, had weakened its capital structure, increasing its bonded debt nearly 19 times, and its fixed charges almost 10 times. Small wonder, then, that its directors, in 1868, were glad to lease it to the prosperous Lackawanna, at a rental equal to the 7 per cent dividend which they themselves were finding it hard to maintain. This lease included the Newark & Bloomfield, opened in 1856, and now the Lackawanna's Montclair branch. And in line with the policy established on the Cayuga & Susquehanna 20 years before, it led to substantial rebuilding of the M. & E., including the construction of a tunnel through Bergen hill and a new main line, specially designed to carry coal traffic, from Hoboken via Passaic and Paterson to a junction with the old main line at Denville, N. J. This is now the Boonton branch of the D.L. & W.

While eastward expansion via the Warren and the Morris & Essex was under way, westward development was not neglected. As early as 1852 Moses Taylor, president of the National City Bank of New York and a Lackawanna manager (director)—who was to play a prominent part in the affairs of the company for the next 30 years—had arranged the financing and incorporation of the Lackawanna & Bloomsburg. This line, now extending from Scranton some 80 miles southwest to Northumberland, Pa., and operated today for freight service only, was designed to tap the rich anthracite fields of Luzerne county. It was merged with the Lackawanna in 1873.

North to the Great Lakes

Back in the middle fifties the D.L. & W. had taken over the Cayuga & Susquehanna from George Scranton and William E. Dodge; and in 1869 and 1870 it either purchased outright or leased the Syracuse, Binghamton & New York, from Binghamton to Syracuse; the Oswego & Syracuse, which extended the S.B. & N.Y. to the Lake Ontario port of Oswego; the Utica, Chenango & Susquehanna Valley, which ran north to Utica, with an eastward branch to Richfield Springs; and the little Greene Railroad, which provided a short but necessary connecting link between the S.B. & N.Y. and the U.C. & S.V.

By 1869, therefore, the Lackawanna had a through

They Ran the Lackawanna For 75 Years

Left above—Samuel Sloan, President, 1867-1899; right above—William H. Truesdale, President, 1899-1925; left—John M. Davis, President, 1925-1941

A picture of William White, president of the Lackawanna since 1941, appears on page 8.

© Underwood & Underwood

route over its own rails from tidewater at Hoboken to the Great Lakes at Oswego—except for the 14-mile segment between Hallstead, Pa., on the west bank of the Susquehanna river, opposite Great Bend, and Binghamton, N. Y., where Lackawanna trains still operated over Erie rails under the old trackage rights agreement.

Moses Taylor and Samuel Sloan—then president of the D.L. & W.—were not the men to let a 14-mile gap stand in the way of completing the line; they solved the problem in 1869, just as John I. Blair had done with the Warren nearly 20 years earlier, by incorporating and building a new railroad—the Valley—and leasing it in perpetuity to the Lackawanna.

And West to Buffalo

There was just one step left—the extension to Buffalo—but that was 10 years in coming, and credit for it is generally given, rightly or otherwise, to none other than Jay Gould. Gould, interested in an eastern connection for his Wabash and his other roads farther west, became, in 1880, one of the incorporators of the New York, Lackawanna & Western, along with Samuel Sloan, Moses Taylor, William E. Dodge, John I. Blair and other men whose connection with the D.L. & W. long antedated his own. The result was the construction of 207 miles of new line between Binghamton and Buffalo. Perpetually leased to the Lackawanna on September 29, 1882, this last and longest addition brought the Lackawanna, for all practical purposes, to its present extent, and gave it the status it has since retained of a Great Lakes-to-seaboard carrier—a status which was fully recognized even by its competitors only two years later.

"Most Highly Developed"

But if the Lackawanna reached its full extensive development less than a third of a century after its original inception, it still had ahead of it a long period of intensive development—a period which was in some ways the most dramatic in its century-long history, and which was to earn for it the title of "the world's most highly developed railroad."

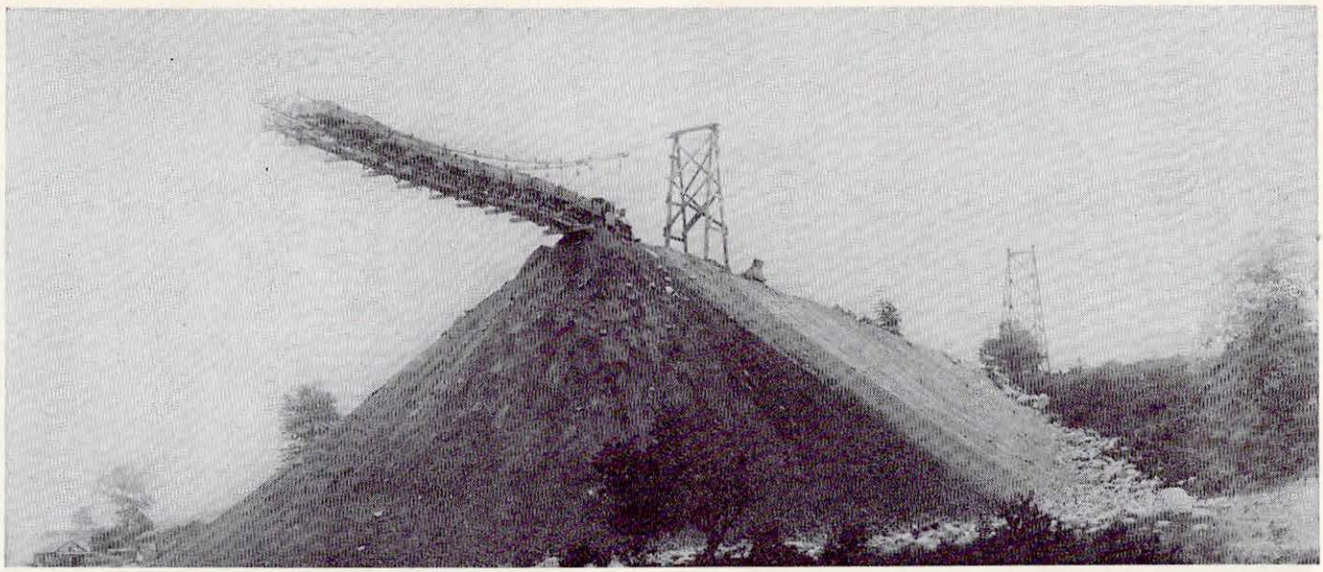
William H. Truesdale, who assumed the presidency on Samuel Sloan's retirement in 1899, and his various chief engineers, W. K. McFarlin, Lincoln Bush and George J. Ray—particularly the latter, who was later to become vice-president and general manager—were the men behind that development. The rebuilding program included such monumental engineering works as Tunkhannock viaduct, said to be the world's largest concrete railway bridge; Pequest fill and Armstrong cut, both on the Hopatcong-Slateford cut-off in northern New Jersey; new terminals at Hoboken and new stations at many other points on the line; extensive grade separations, particularly in New Jersey suburban territory; and a comprehensive program of curve and grade reduction.

The final step in this improvement program—electrification of the old main line to Dover and of the Montclair and Gladstone branches, a total of 70 miles of line and 160 miles of track—was completed in 1930, during the administration of John M. Davis, who succeeded Mr. Truesdale as president in 1925; this was the first 3,000-volt direct current railroad suburban electrification in America. But the major problem of Mr. Davis' administration was the one of weathering—with difficulty, but without bankruptcy or reorganization—the long years of depression in the nineteen-thirties.

His successor, present President William White, has faced and is successfully surmounting, problems of a different sort. In the early years of his incumbency there was the question of handling wartime traffic, which bore heavily on the Lackawanna both in passenger and freight. Since 1945 there has been the question of cutting expenses in the never-ending effort to keep them below rising costs of wages, materials and taxes—toward which end the Lackawanna has dieselized many of its non-electrified operations; has mechanized and budgeted its track maintenance work (*Railway Age*, August 20, page 40); and has sought to reduce its fixed charges and taxes by merging into one corporation many of the lines which it previously controlled only by lease.

This last accomplishment, more fully dealt with in another article, may, in the final analysis, prove to have been the outstanding achievement of Mr. White's tenure as president.

Extensive and intensive development of the railroad itself have not, of course, been the whole Lackawanna story. Always, and still, one of the major anthracite carriers, it was also, until well into the present century, a major producer and marketer of anthracite in its own name. Only after passage by Congress in 1906 of the Hepburn act was the business of mining and selling coal turned over to a separate company; and until 1915, when the United States Supreme Court ruled against the railroad, this Delaware, Lackawanna & Western Coal Co. remained under practical control of the railroad. Even after that date, there continued a close



The early Twentieth century "rebuilding" of the Lackawanna under President William H. Truesdale and Chief Engineer George J. Ray involved some of the heaviest railroad construction work ever undertaken in North America. Among the major projects were Tunkhannock viaduct, illustrated and described on pages 86 and 87, and the Hopatcong-Slateford cutoff in northern New Jersey. The latter, in addition to two large concrete viaducts, required construction of Pequest fill—one of the world's biggest railroad fills—over three miles long, with a maximum height of 110 feet

affiliation between the businesses of mining, marketing and transporting coal. It was not, in fact, until September 1, 1921, that mining and marketing were completely divorced from transportation, and that the Delaware, Lackawanna & Western Railroad became a railroad and nothing more.

Phoebe Snow—and the Telegraph

Nor does the mere recital of dates, names, charters and mergers give any hint of those human sidelights which may have little direct bearing on the course of corporate history, but which are apt to be longer remembered.

No account of Lackawanna history, for example, would be complete without mention of "Phoebe Snow," that immaculately groomed turn-of-the-century glamour girl whose travels on the Lackawanna made her name—and its—household words. Perhaps as famous as any other character ever created by skillful advertising, her name lives on today in the title of the Lackawanna's premier passenger train.

The Lackawanna, too, may have been one of the first companies ever to use the "testimonial" type of advertising which has become so commonplace today—a turn-of-the-century timetable shows Mark Twain penning a telegram lauding Lackawanna passenger service.

Morristown, the original terminal of the old Morris & Essex, may fairly be considered the birthplace of the electric telegraph. The basic idea is said to have come to its inventor, Samuel F. B. Morse, while he was crossing the Atlantic, and he made his first crude machines in New York, but it was at the old Speedwell Iron Works at Morristown that he perfected his first practical apparatus. There, in January 1838, in association with Stephen and Alfred Vail, Morse gave a public exhibition that convinced a doubting world that messages could be transmitted by electricity over wires. It was not until six years later that he sent his better known message, "What hath God wrought?" from Washington to Baltimore.

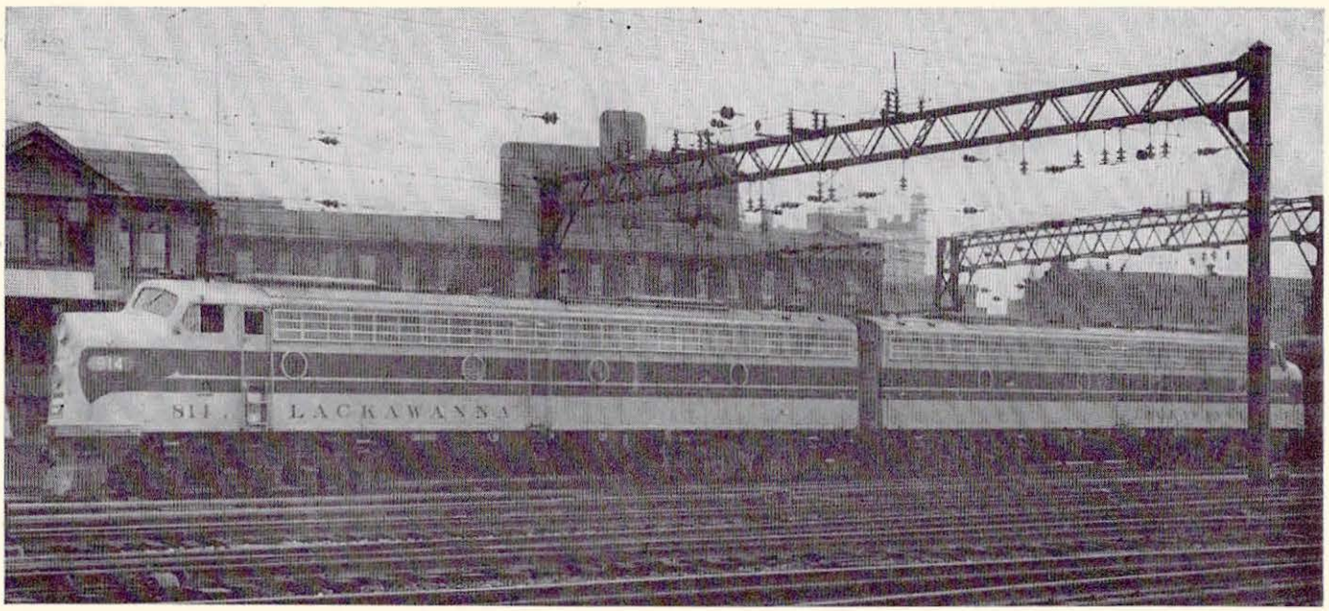
Appropriately enough, therefore, it was along the Lackawanna line between New York and Buffalo that the Western Union Telegraph Company, in 1939, opened its first regular commercial facsimile telegraph circuit, in which the message reproduced at the receiving station is a replica of the original message as sent.

And appropriately enough, too, it was on the Lackawanna that Dr. Lee DeForest and David Sarnoff—then a telegraph operator and now chairman of the board of the Radio Corporation of America—first experimented with development of wireless telegraphy over land. Guglielmo Marconi, its inventor, thought it could be used only at sea, but DeForest and Sarnoff proved otherwise—with three towers at Hoboken, Scranton and Binghamton, and equipment installed on the "Lackawanna Limited," predecessor of today's "Phoebe Snow."

There have been humorous incidents in the Lackawanna story—as when George D. Phelps, first president of the D.L. & W., fell out with his former associates on the board of managers and with William E. Dodge in particular, and took the dispute, not to court, but to the Synod of the Presbyterian Church—without, be it noted, gaining any satisfaction thereby.

And there have been dramatic incidents as well—when, for example, the famous engineman John Draney ran from Hoboken to Buffalo, on September 11-12, 1901, in six hours and 45 minutes, to take New York doctors to the bedside of United States President William McKinley, following his assassination.

On the whole, the history of the Lackawanna has been a relatively happy one. Well conceived, well financed in the beginning, and always truly and ably officered and administered, it has seen many more good years than bad—and the few bad ones have been due without exception to external circumstances beyond its own control. No better hope can be expressed than that its next hundred years may be as good as its first—a hope symbolized by the railroad's own pledge, as it "looks back with pride to the accomplishments of the past . . . to provide even better transportation service in the years to come."



Through passenger trains and heavy freight trains are operated by modern diesel power both in and out of the electrified New Jersey suburban zone

Today's LACKAWANNA

Sharp reduction in fixed charges, through merger of subsidiaries, has greatly improved financial outlook

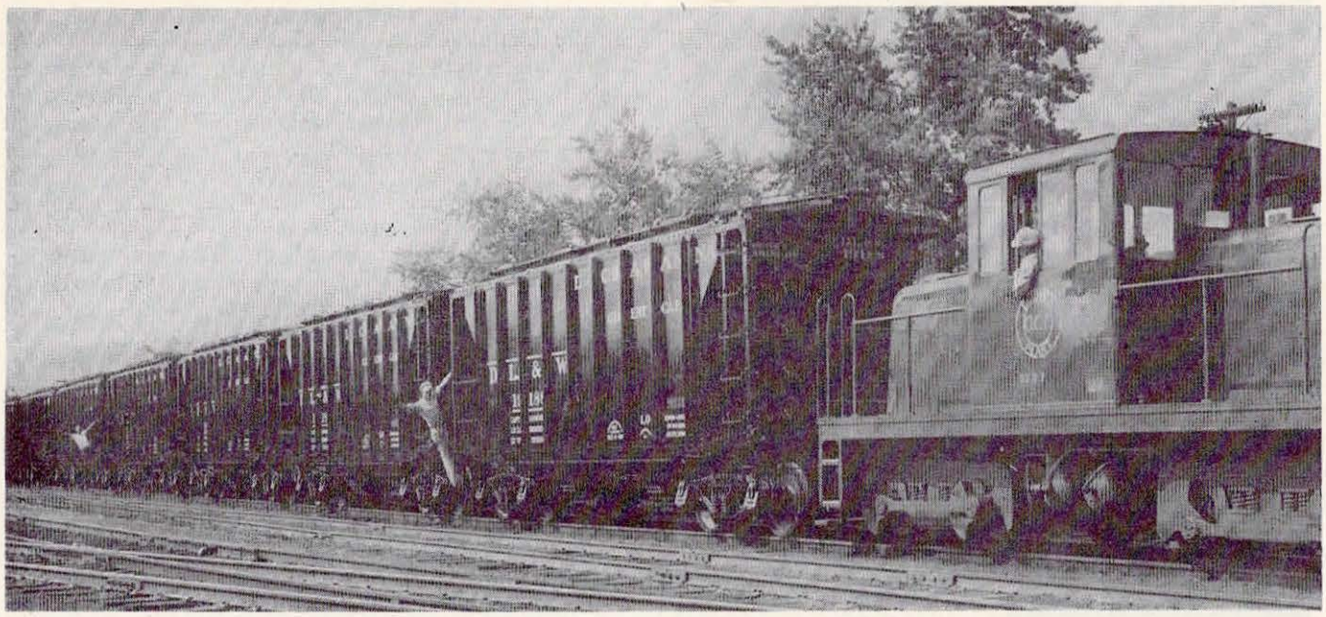
Begun 100 years ago, primarily to transport coal from the mines of northeastern Pennsylvania to the markets of the eastern seaboard and of central New York state, the Delaware, Lackawanna & Western has always been one of that small group of carriers known as "anthracite" roads. It still belongs to that group; "products of mines," including coal, accounted for 53.6 per cent of its entire revenue freight tonnage in 1950.

Not Just Anthracite

But in its century-long history it has become much more than the "anthracite" road its founders intended it to be—it has become an important carrier of general freight, including manufactured products and perishables, and of through and suburban passenger traffic. The marked difference wrought by a hundred years shows up in figures of revenue earned from various classes of traffic. In 1853, the second full year after the opening of the Liggett's Gap Rail Road, and the first year for which figures are available, coal accounted for 65 per cent of freight revenue and 53 per cent of all revenue; in 1856, when a through connection to tidewater was first established, coal produced 70 per cent of freight revenue and 58 per cent of all revenue. One hundred years later, in 1950, coal (including bituminous) represented less than 25 per cent of total freight revenue, and less than 19 per cent of all revenue. "Other freight," meantime, which produced less than 25 per cent of total revenue in 1856, accounted for nearly 60 per cent in 1950.

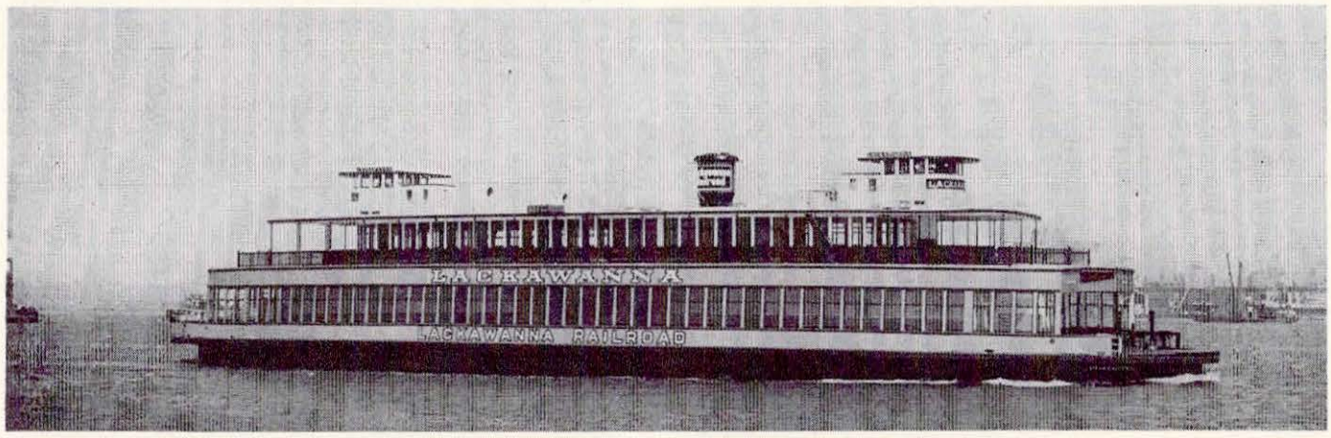
Behind this change in the road's traffic are several factors. One, of course, is the decline in the relative importance of anthracite for home heating. But others are not far to seek—growth of population and industry in the territory served; the railroad's own extension, on the east to the industrial area of northern New Jersey and the world port of New York, and on the north and west to such industrial centers as Utica, Syracuse and Buffalo; establishment of through routes, via Buffalo, with connecting western carriers; and, perhaps especially, the emphasis which recent and present management places on service to shippers.

The Lackawanna is said to have been the first eastern railroad to establish, originally in connection with the Wabash and later with the Nickel Plate, through car lines between New York and important midwestern cities, for perishable freight (especially meat) and for merchandise and l.c.l. Today, the Lackawanna and its Nickel Plate and Wabash connections are two of the lines offering second morning delivery on l.c.l. freight between New York and Chicago—a comparatively new service which typifies the efforts the road has constantly made to meet the desires of shippers, and which have



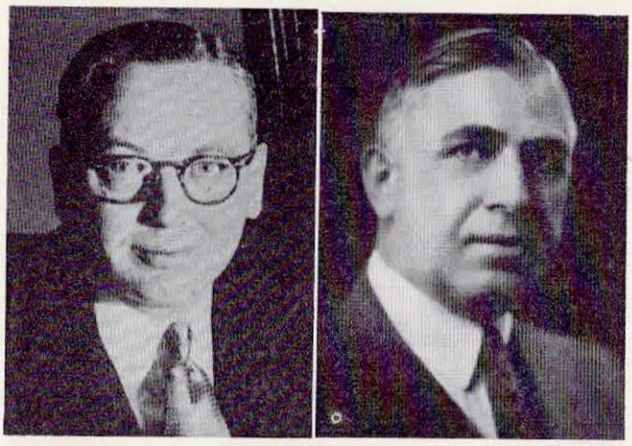
Like other progressive railroads, the Lackawanna is steadily improving its freight car inventory. These covered hopper cars were recently built by the American Car & Foundry Co.

Attractive new equipment, like this club-lounge car, is a big reason for the popularity of the Lackawanna's two-year-old New York-Buffalo streamliner, "Phoebe Snow"



To carry its passengers across the Hudson river from Hoboken to New York the Lackawanna operates nine ferryboats. The one shown here was recently converted to diesel operation

They Run the Lackawanna Today



Left, above—Perry M. Shoemaker, vice-president, operations; right, above—Clyde F. Farmer, vice-president, traffic; left—David I. Mackie, vice-president and general counsel

A picture of William White, president of the Lackawanna since 1941, appears on page 8.

enabled it to compete successfully for through traffic against much larger roads having through routes on their own rails.

A Passenger Carrier, Too

In passenger business, too, the road has held up its end, by offering direct connecting service west of Buffalo, despite the handicap of being obliged to maintain somewhat slower schedules than those provided by such competing routes as the New York Central and the Pennsylvania.

Between New York (Hoboken) and Buffalo, the Lackawanna operates, in the "Phoebe Snow," one of the nation's newest streamliners over a short-mileage route that is replete with both scenic and historic interest. Since its introduction late in 1949, the "Phoebe Snow" has won a high degree of public acceptance, and has, Lackawanna officers believe, brought the road a substantial amount of extra "party" business which would otherwise have gone to competing carriers. Behind this, they say, is the expressed desire of many such organized groups to ride on the "Phoebe Snow," either in extra cars on the regular train or in special trains made up of similar equipment and running on similar schedules.

The Lackawanna is likewise—perhaps unfortunately for it—one of New York's big commuter roads, with a daily average of some 35,000 local passengers from Morris and Essex county towns into Newark and New York. Financially, this business is a losing proposition on the Lackawanna, as on all other roads saddled with it. But aside from their constitutional inability, common to all commuters everywhere, of being unable to see any reason for paying remunerative fares, only the most querulous of Lackawanna commuters can find cause for complaint. Except on the Boonton branch, they ride in relatively modern and carefully maintained electric trains operated at an overall speed and with a frequency of service matched in few other suburban passenger operations. The September issue of the Official Guide, for example, shows 34 scheduled Monday-through-Friday trains from Morristown to Hoboken (30 miles), and 36 in the opposite direction, with running times of from 45 to slightly over 60 minutes. Quite a contrast, that, with the days of 1840, when the Morris & Essex ran two trains a day between Morristown and New York; when the journey took three hours one way, or six hours round trip; and when Vincent B. King, a pioneer Morristown commuter, is said to have made his entire daily journey standing in the aisle as a precaution against being impaled by a strap iron rail "snakeheading" through the car floor.

Traffic, Equipment, Investment

In 1950, the Lackawanna's freight business involved a total of nearly 24.5 million revenue tons, carried an average distance of 168 miles, for a total of some 4,117 million revenue ton-miles, at an average revenue of 1.57 cents. It required over 3.2 million freight-train miles and just under 3.9 million freight locomotive-miles. In passenger service, it carried almost 19.5 million revenue passengers, traveling an average distance of 22.8 miles, for a total of 443.1 million revenue passenger-miles, at an average revenue per mile of 2.22 cents. It required 2 million steam or diesel passenger train-miles, 1.8 million electric passenger train-miles, and 2.3 million passenger locomotive-miles.

To handle this traffic, the Lackawanna operates 966 miles of first main track (951 owned and 15 used under trackage rights); 595 miles of second, third and fourth main track; and 848 miles of yard tracks and sidings. At the end of 1950 it had in service 124 steam and 35 diesel road locomotives, 54 steam and 54 diesel switchers, and 141 electric motor cars for suburban passenger service. It had 16,409 freight-train cars; 142 trailer cars for use in electrified suburban territory; 225 other passenger-carrying cars; and 275 non-passenger-carrying passenger-train cars. It had 518 units of company service equipment and 189 units of marine equipment, including nine ferryboats. Its proportion of diesel locomotives has been further increased by delivery of new units during the current year.

Net depreciated value of road and equipment, as of December 31, 1950, was just over $259 million; capitalization, as of the same date, included funded debt outstanding of $113.9 million, equipment obligations of $19.7 million, and 1,688,240 shares of $50 par capital stock.

The track and equipment was used to produce gross revenues of $82,343,568—second highest in the company's history—at a total operating expense of $63,995,304—third highest in company history. After deduction of taxes—over $9 million—and equipment and joint facility rents, net railway operating income was $9,047,985; income available for fixed charges was slightly higher; net income, after fixed and contingent charges of $5,579,892, was $3,842,749, or $2.28 per share.

Out of this, the company paid its common stockhold-

ers a dividend of 25 cents per share—the third of that amount to be paid since 1931. The 25-cent disbursement, however, was actually comparatively generous—because the company's bond indentures require that, until its fixed and contingent interest charges are reduced to $4 million per year, 60 per cent of its available net income (after certain deductions), plus a sum equal to the amount of any dividend paid, must be paid into a general sinking fund for retirement of debt. After complying with these indenture requirements, the company's 1950 net income available for dividends or other corporate purposes was only $609,850, or 36 cents per share of stock.

Merger of Subsidiaries

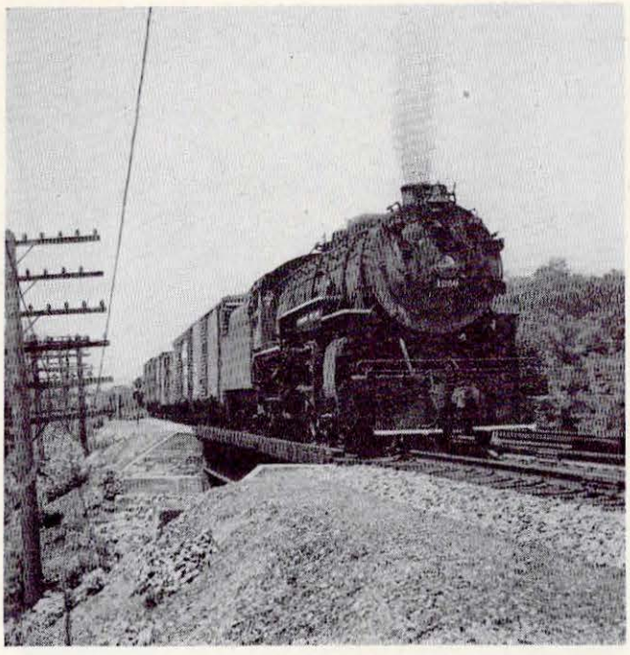
Fixed and contingent charges of $4 million would have been covered anywhere from 1-1/6 to 3-1/7 times by net income available in all but two of the past 20 years. But actual fixed (and contingent) charges in those 20 years have varied from less than $5.6 million in 1948, 1949, and 1950 to over $8.4 million in 1933. Those actual charges have been covered in only 11 of the past 20 years, and in two of those only by narrow margins.

It is little wonder, then, that one of the primary objectives of President William White's present administration has been to reduce such charges to a safe, workable basis. The bond indenture provision outlined above indicates that the goal has not yet been fully reached, but remarkable progress has been achieved; 1950 charges, fixed and contingent, of $5,579,892, were some 34 per cent below the 1933 high of $8,442,854, and 27 per cent under the 1941 figure of $7,629,324.

Most of this reduction has been accomplished by acquiring outright, and dissolving, the multitude of leased or partially owned lines of which, until recently, the system was largely composed—as is shown in the historical review beginning on page 70. Agreements with many of these companies called for guaranteed dividends on their stock—in some cases as high as 7 per cent and in one as high as 12—or guaranteed rentals at figures reasonable enough when the leases were made, but no longer justified under present regulatory and competitive conditions. Also, aside from the expense of maintaining so many separate corporations, the leases and rental agreements involved heavy tax payments. One obvious answer to the fixed charge problem, therefore, was to absorb these leased lines. This program, completed in 1945, 1946 and 1947, involved merger with the parent Delaware, Lackawanna & Western Railroad Company of the following subsidiary companies:

Cayuga & Susquehanna Railroad Co.;
Chester Railroad Company;
Erie & Central New York Railroad Co.;
Greene Railroad Company;
Hoboken Ferry Company;
Lackawanna Railroad Company of New Jersey;
Morris & Essex Railroad Co.;
Morris & Essex Extension Railroad Co.;
New York, Lackawanna & Western Railway Co.;
New York, Lackawanna & Western Railway Co. of Pennsylvania;
Newark & Bloomfield Railroad Co.;
Oswego & Syracuse Railroad Co.;
Passaic & Delaware Railroad Co. (Gladstone branch);
Passaic & Delaware Extension Railroad Co.;
Sussex Railroad Company;
Syracuse, Binghamton & New York Railroad Co.;
Utica, Chenango & Susquehanna Valley Railroad Co.;
Valley Railroad Company; and
Warren Railroad Company.

Last year, the Lackawanna took an initial step toward meeting a 1955 maturity of $19,356,000 of Morris & Essex Construction bonds, by giving holders thereof a chance to exchange these bonds for cash and Pennsylvania Division Refunding Mortgage & Collateral Trust bonds maturing in 1985. Holders of more than 58 per cent of the M. & E. bonds took advantage of the offer, reducing the 1955 maturity to $8,006,000. Otherwise, the Lackawanna has no important bond maturities prior to 1973. Equipment trust and conditional sales agreement maturities are, and for the next few years will remain, comparatively heavy in relation to equipment depreciation charges, but do not appear to offer any very difficult problem.



On the Lackawanna, as on other railroads, steam power is being replaced by diesel

What About the Future?

Net income in 1951 is expected to reflect a federal income tax refund, for 1942, of about $2.1 million. The Lackawanna may also profit from anticipated dividends on Nickel Plate common stock, of which it will own 330,000 shares after the 5-for-1 split just authorized by the Interstate Commerce Commission (*Railway Age*, October 1, page 144).

But for the longer term, the outlook for the Lackawanna, as it heads into its second century, is clouded by the same factors that darken the horizon for the entire railroad industry—excessive regulation; competition from other less severely regulated, and subsidized, agencies of transportation; and wage, material and tax costs which have risen much more rapidly and to a much higher level than rates or fares. The necessity of continuing to provide a vast quantity of unremunerative short-haul commutation service is, and for the foreseeable future is likely to remain, an added burden. The uncertainties connected with those factors, all beyond company control, make prediction difficult.

But—on the favorable side—its physical condition is, as it always has been, excellent. Its financial condition appears better than for many years past. And its management is ably carrying on the service-minded tradition that has made, and kept, the Delaware, Lackawanna & Western one of America's great railroads.

At Pier 68 in New York a low-lift truck takes a loaded live skid up the ramp onto a car float

Some carload freight is handled at Pier 68, such as this palletized cement being stacked by an electric fork truck

Program began 27 years ago with live skid-platform lift operation in New York; successful mechanization of relatively small station completed just this year

How Mechanical Handling of Freight Pays Off for the Lackawanna

Back in 1924, the Lackawanna, searching for better and more economical ways to handle freight, installed in a New York City freighthouse, Pier 68, North River, its first mechanical handling equipment. Since that time mechanization has been continued, both extensively and intensively, to the point where, in 1950, about two million tons, or over 80 per cent, of the l.c.l and carload freight handled at piers and major stations by the Lackawanna were handled mechanically. At first mechanization was confined to stations receiving a large volume of freight daily, but within the past year the problem of mechanizing a moderate-volume station has been attacked with success.

The 1924 purchase of equipment for Pier 68 consisted of three electric low-lift trucks and 60 live skids. Later acquisitions brought ownership of electric lift trucks to 16, in 1930, and permitted 100 per cent mechanization of Pier 68. (There have been no hand trucks at this station for many years.) Subsequent purchases have brought today's roster of electric lift trucks to 33, distributed at Piers 13, 26, 41 and 68 in New York, Hoboken City, N. J., freighthouse, and the Hoboken passenger terminal mail handling operation. Despite the fact that in recent years other methods of handling l.c.l. have been tried, and with considerable success, Lackawanna officers feel that the low-lift-live-skid operation is the best method yet devised for handling large quantities of miscellaneous freight.

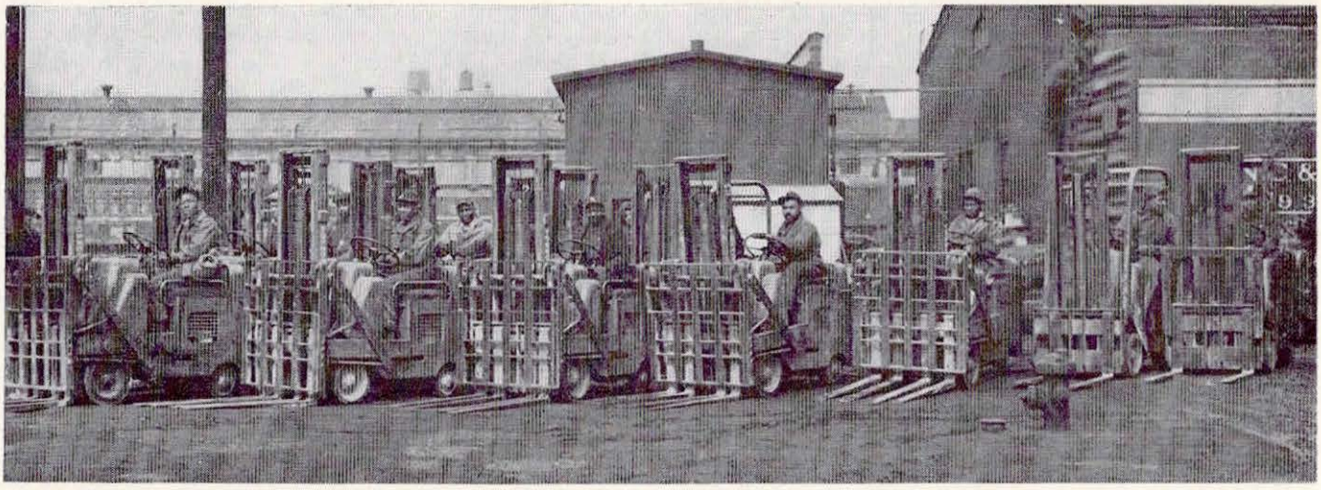
In 1941, the Lackawanna purchased its first gasoline fork-lift truck. It continued to make additional purchases during and immediately after the war, so that in 1947 it had a fleet of 38 gasoline fork-lift trucks, more than enough to mechanize completely its Hoboken pier operation. (The Lackawanna also installed fork-lift equipment at a few other stations.)

Ten machines delivered in 1947 were of the fork-lift pusher type, and 15 more were purchased in 1949. The railroad has ordered 13 additional units which are scheduled for delivery in November and December of this year.

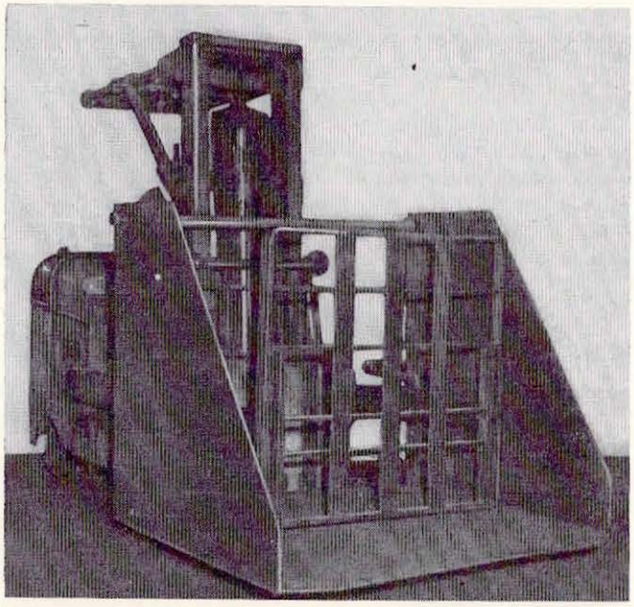
The fork-lift truck with push-off device and the take-it-or-leave-it pallet have been combined to form the basic handling medium on the covered docks at Hoboken Terminal Piers. This station handles a large volume of carload export freight, which moves either directly from car to barge or lighter, or from car to pier for temporary

Fork truck, equipped with push-off device, picks up load of sugar from take-it-or-leave-it pallet at Hoboken piers, which have a total of 35 fork trucks

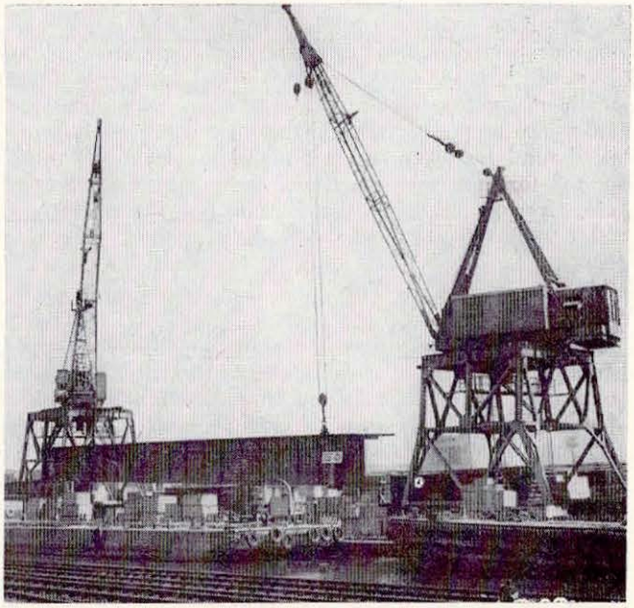
Operator at Hoboken uses push-off to unload sugar on paper-covered floor of barge. All Lackawanna New York City piers are equipped with fork trucks, as are many other stations



Gasoline fork-lift trucks of the Lackawanna are maintained in a specially built shop at the Hoboken piers, while electrics are maintained by a separate shop in the Hoboken passenger station



Much hard labor was required in handling baled crude rubber, prior to adoption of the scoop attachment for doing this work. The job is easy now



Two new gantries lifting together handle with ease a 103-ton girder. One of these cranes may be rigged with a magnet, the other with a clamshell bucket

storage and later, when export orders are received, from pier to barge or lighter, and thence to ships. (Import freight, for the most part, is handled directly from barge or lighter to car.)

Palletization, particularly since the take-it-or-leave-it pallet was adopted, has been found especially useful in handling much of the export-import freight. In 1945 (before the take-it-or-leave-it pallet was adopted) the combined average output of hand trucking and fork truck-pallet gangs at the piers was 1.75 tons per man-hour, while in June 1947, with complete mechanization, the production figure had reached 2.52 tons per man-hour. Highest production to date for any one month has been 3.156 tons per man-hour. These figures include the time of supervisory and auxiliary personnel, as well as truckers.

Constant experimenting with the fork-lift pusher type trucks at Hoboken piers has developed refinements of operation as well as some useful accessories (*Railway Age*, March 25, 1950, page 52). Scoops, easily attached to the forks, have proved useful in handling crude rubber in bales, as well as other commodities which do not make satisfactory pallet loads. Steel plates, also easily attached to the forks, have proved better than pallets in handling such shipments as oil in drums.

Cranes for Open Docks

In addition to progress at the covered piers, in 1950 the Lackawanna bought two 60-ton capacity gantry cranes for use at the Hoboken lighterage station open docks. These cranes are installed so that they can load or unload lighters tied up at any point in a 1,600-ft. slip.

The gantries share a running track 1,500 ft. long, and are protected from collision by an electric-eye track circuit warning system which registers in the operator's compartment of each crane. The cranes span two tracks, with a total capacity of 60 cars, and in addition, reach two other tracks within practical lifting distance. Ample space for ground storage of commodities not subject to weather damage is available within reach of the cranes. Working together, these cranes have accomplished lifts up to 106 tons.

Recent studies indicate that these cranes have fulfilled expectations in allowing the retirement of two older and smaller gantries and seven steam locomotive cranes. In addition, one switch engine is saved daily at Hoboken, while many tug boat movements have been eliminated. In a representative month the new gantries improved eastbound tons handled per man-hour from 3.9 to 4.7, or 0.8 tons per man-hour over the same month the previous year. Tons handled per crane-hour improved from 19.9 to 28.9 in the same period.

Mechanize L.C.L. Too

In 1947, an experiment was made with fork trucks and pallets on l.c.l. at Hoboken City. All inbound and outbound l.c.l. freight to and from New York, Brooklyn, Harlem, Bronx, Jersey City, Hoboken and Union City is handled at this station. Prior to the introduction of fork-lift and pallet equipment, this freight was handled with live skids and low-lift platform trucks. At the conclusion of a nine months' trial period, the fork-lift pallet operation was discontinued and the live skids and platform trucks were returned to service, since the experiment showed the latter method to be superior for the work at that particular station.

While better handling methods were being effected in the New York area, the larger inland stations were not neglected. For example, 32 Chore Boy gasoline-powered burden carriers were purchased for the Binghamton, N. Y., transfer in 1946, which permitted almost complete mechanization of that station. This transfer handles, roughly, 400 tons of l.c.l. per working day. A typical average performance of Chore Boy gangs is .93 tons per man-hour, despite the fact that the Binghamton operation requires truckers to travel relatively long distances, working through cars, and on comparatively narrow platforms.

Other methods of improving freight handling performance adopted by the Lackawanna have included the use of semilive skids and hydraulic jacks at the Syracuse, N. Y., freighthouse, to supplement the hand truck operation and to keep a high percentage of freight on wheels. In addition, all large stations and many one-man agencies are equipped with gravity conveyors.

It Was Profitable

Whether or not small stations can be mechanized with profit long has been disputed. In the early part of 1950, the Lackawanna management decided to experiment at the Passaic, N. J., freight station, in order to find an answer to this question. This is a relatively small station, handling about 85 tons of freight per working day. Three gasoline fork-lift trucks—each of 2,000 lb. capacity—and necessary pallets were purchased for the station, and the operation was completely mechanized. The experiment has justified itself, since the work performed per man-hour has increased from .662 tons before mechanization to .954 tons in September of this year. In other words, each man handles 4,600 lb. more freight daily than he did a year ago.

Mechanical Mail Handling

At the Hoboken passenger station, electric lift trucks and live skids have been used in the mail handling operation for many years. During rush periods in the Hoboken mail operation, the electrics are supplemented by gasoline fork trucks which handle mail loaded in wooden pallet boxes of large capacity. Both live skids and pallet boxes are designed so that they may be placed inside mail cars through the large doors.

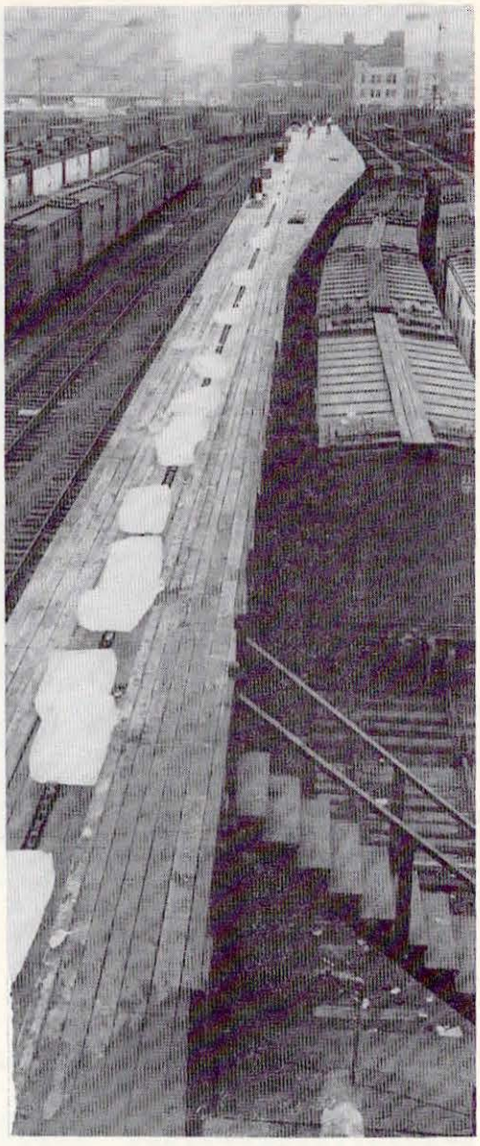
Conventional four-wheel wagons are used at most other stations, supplemented at Binghamton by a tractor and at Buffalo by electric flat bed or "body" trucks. Four electric body trucks are employed at Hoboken for hauling pouches (first class mail), newspapers and baggage to and from trains. Scranton uses a gasoline fork-lift truck with pallet boxes in addition to the four-wheel mail wagons. This truck places the pallet boxes on four-wheel wagons, beds of which are high enough to be level with car floors. This type of operation makes for comparative ease in getting mail from platforms to cars.

Daily mail counts are maintained at major mail handling stations and have proved valuable in policing handling performance. Efficiency comparisons are made on the basis of feet* of mail handled per man-hour. The composite average production of five major mail handling stations is running about 2.00 ft.* per man-hour.

Advantages to the Lackawanna from mechanization in the last 27 years have been great. Mechanization-minded operating officers will see to it that this parade of progress continues.

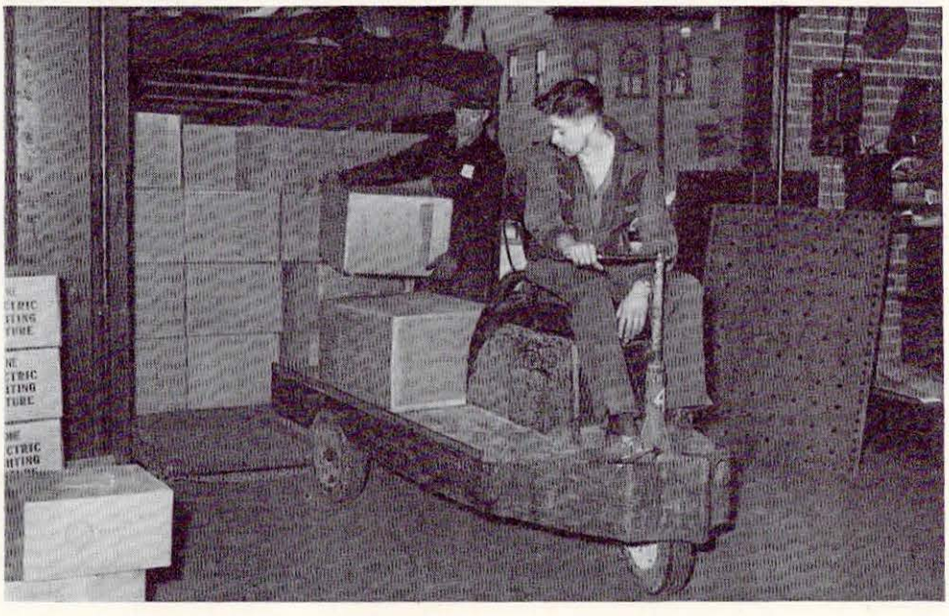
*These figures refer to linear feet of space in mail cars; 46 bags of mail are considered to equal three linear feet, and 1½ parcels to equal one bag.

High-lift truck at Hoboken passenger station transfers a live-skid load of mail into through-train mail car

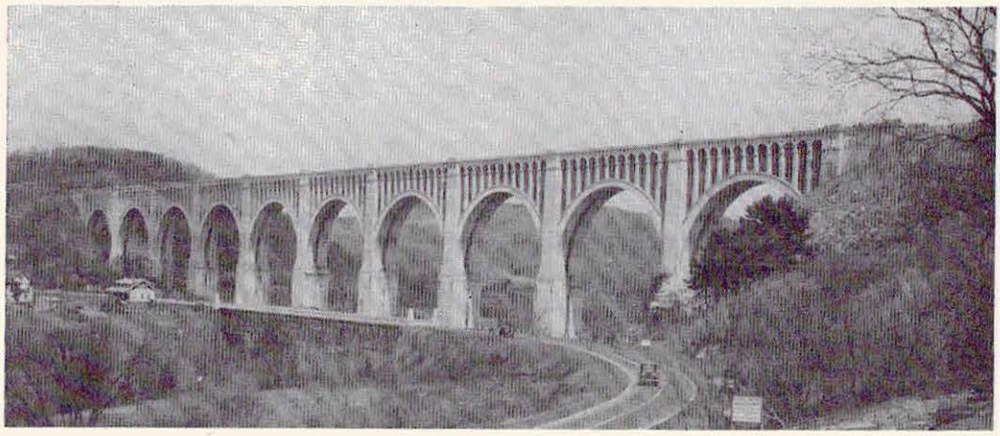


In 1950, extensive changes were completed at Hoboken icing station, including building a new ice house and installing a conveyor

Two pallets loaded with merchandise are being moved at the Passaic, N. J., station by a 2,000-lb. capacity fork truck



Chore Boy gets loaded with freight from pick-up truck at Binghamton. This station and Scranton Transfer use single-return ballot system in checking freight



The largest bridge of its kind in the world, the Lackawanna's Tunkhannock viaduct, built more than 35 years ago, was a daring application of reinforced concrete to the construction of a bridge carrying railroad loadings

Taken in 1925, shortly after the structure was completed, and before electrification, this picture shows a section of concrete viaduct at East Orange, N. J., which the Lackawanna built to carry its tracks over many intersecting streets

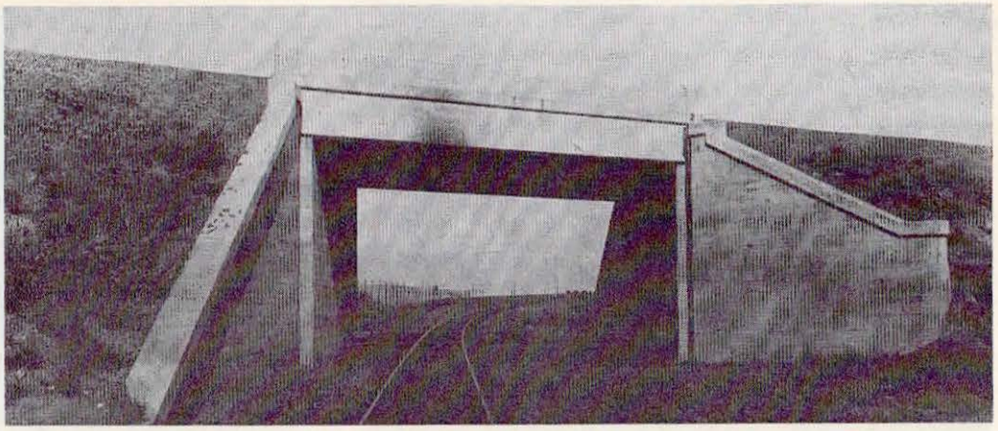
Bold Enterprise Shapes

Engineering Policies on the Lackawanna

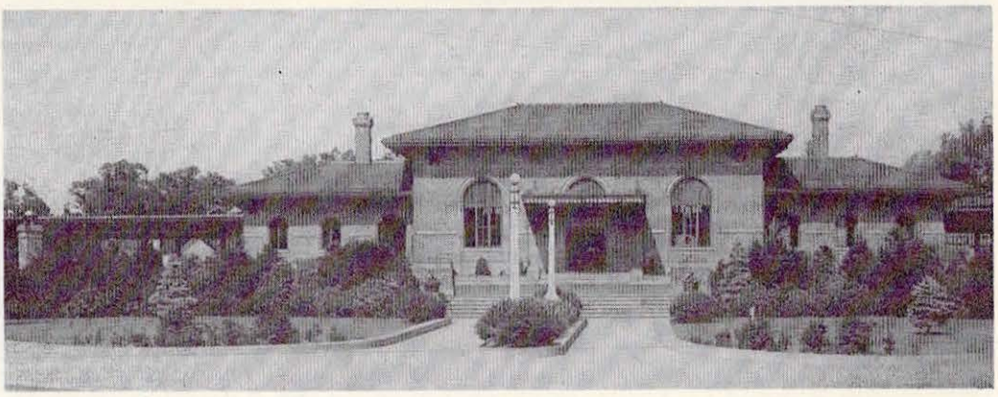
Road has pioneered in design and use of reinforced concrete structures, in construction of attractive stations, and in use of "detour" system and other advanced maintenance practices

In dealing with the design, construction and maintenance of its fixed properties, a railroad has one of two general lines of approach open to it; it can either "drift with the current," adopting new policies only after they have proved their worth in actual practice on other railroads, or it can strike out boldly on its own, blazing a trail for other railroads to follow. Disdaining the "me too" role the Lackawanna has, particularly during the second half-century of its existence, exhibited a spirit of bold enterprise in developing and putting into effect advanced forms of structural design as well as in discarding traditional maintenance practices in favor of new methods and equipment that have frequently been adopted on this railroad first and later taken up by other lines.

One of the fields of engineering in which the Lackawanna has pioneered is the use of reinforced concrete in bridges and buildings. The road's inclination to use this material became apparent early in the twentieth century. The first large-scale use of reinforced concrete in buildings was in the roof and floor of the locomotive shops at Kingsland, N. J. Somewhat later, in 1906-08, similar construction was used in the shops at Scranton, Pa. The Lackawanna also pioneered in the use of reinforced concrete in construction of low umbrella-type train sheds with openings over the tracks to carry off smoke and steam from locomotives. Known as the Bush-type train shed, the first of these was built at Hoboken, N. J., and others were later constructed at Scranton and Buffalo. The Lackawanna also was one of the first railroads to use concrete walls in the construction of docks at tidewater. In these structures the walls rest on timber



Lackawanna engineers pioneered in the design and construction of precast reinforced-concrete slab bridges. A substantial reduction in the floor thickness was effected by using steel reinforcement in compression



That the Lackawanna has long believed in building attractive passenger stations in landscaped settings is shown by this photograph of the station at Morristown, in the North Jersey suburban territory. The picture was taken in 1923

piling and grillages that do not extend above the low-water level, and the spaces between the walls are filled in.

As a pioneer in the use of reinforced concrete, the Lackawanna is most widely known, however, for its concrete bridges and viaducts. Reinforced concrete was first used for this purpose on a large scale in 1908-11 in the construction of the New Jersey cutoff, which incorporates two large viaducts, one over Paulins Kill and the other over the Delaware river.

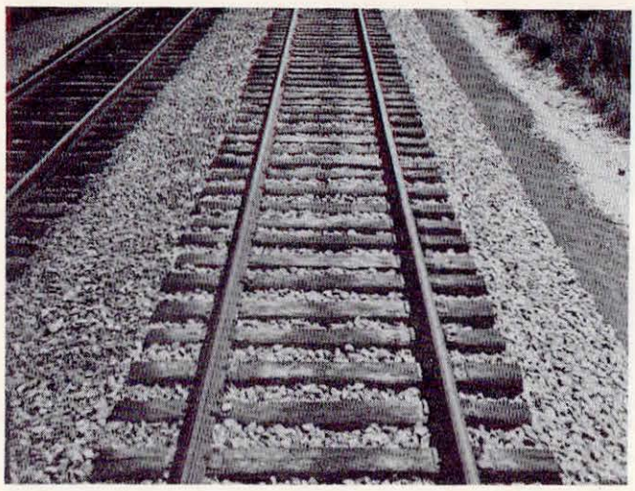
A few years later, in 1912-15, the world's largest concrete viaduct was built by the Lackawanna, namely, the Tunkhannock viaduct, which carries the double-track main line across Tunkhannock creek near Nicholson, Pa. Famous the world over for its size and symmetrical beauty, Tunkhannock viaduct is 2,375 ft. long and rises 240 ft. above the water level. It consists of ten 180-ft. arches and two 100-ft. arches. Each of the arches is surmounted by small superimposed arches upon which the concrete deck of the viaduct is carried. The foundations of the viaduct are carried down to bedrock, approximately 80 ft. below the surface of the ground.

Early uses of reinforced concrete on the Lackawanna included many bridges where the railroad was carried over or under intersecting highways. One of the larger projects of this type was the elimination of grade crossings through the Oranges in New Jersey, where the tracks were elevated on a reinforced-concrete viaduct. In the beginning, the use of reinforced concrete for individual grade-separation structures was limited to situations where the spans were relatively short. To adapt the use of the material to structures where longer spans were necessary, but at the same time keeping the floor depth of the bridges to a minimum, the Lackawanna introduced the flat-slab type of construction. Such use involved two new conceptions in reinforced-concrete design. One was the use of reinforcing steel to overcome compressive stresses in excess of those concrete is capable of sustaining, and the second was the use of a single slab continuous over two spans. Another innovation was precasting these slabs to facilitate and expedite the work of installing them in bridges on existing alinements.

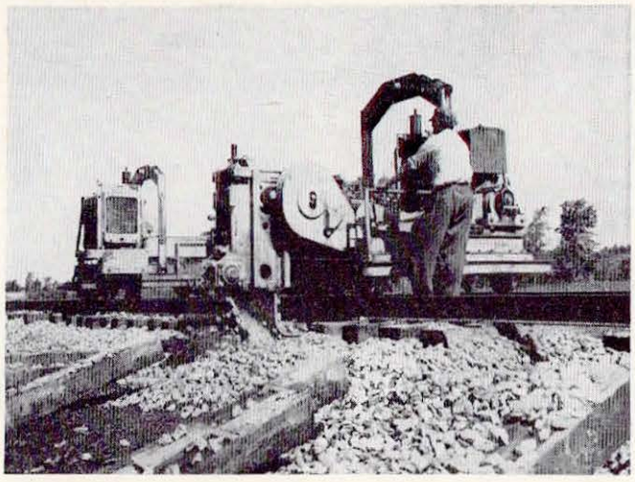
Passenger stations on the Lackawanna have been noted for their beauty and variety of architecture and the permanence of their construction. Especially attractive are many of the stations in suburban territory in New Jersey. Of brick and masonry construction, these structures appear to have been designed to harmonize with their picturesque settings, usually including wooded hills. As part of the scheme to promote the attractiveness of the stations, the property immediately adjacent to each normally consists of well-kept lawns and shrubbery, planned to provide an appropriate setting for the station.

Heavy-Duty Track, Plus . . .

Regarding the character, durability and design of its fixed properties in general, including the track, the Lackawanna has at least kept up with other progressive railroads, and in some instances has adopted practices that are considered in some quarters to be far in advance of the times. With respect to the weight of the rail section, the nature of the ballast and ties, and other parts of the track, the Lackawanna's standard construction



The Lackawanna management was quick to recognize the economy of heavy-duty track construction, with a free-draining ballast section of crushed stone, and has consistently employed it on all main line trackage



All out-of-face track maintenance operations are highly mechanized. This illustration shows two Cribex machines removing ballast from the track to facilitate the insertion of new ties

conforms to the present-day conception of heavy-duty track. Typical heavy-duty main-line track construction on this road consists of 132-lb. rail, six-hole headfree joint bars, double-shoulder "waffle bottom" tie plates, 24 creosoted crossties per 39-ft. panel (the road first started using creosoted ties in 1910) and crushed limestone or trap-rock ballast. Adequate anchorage is provided to maintain the joint gaps in the rails.

The Lackawanna was one of the first railroads to give adequate recognition to the necessity for keeping ballast clean and in a free-draining condition as a means of promoting economy in track maintenance. For many years the road has conducted ballast-cleaning programs every year, the object of which is to clean the ballast in the shoulders and intertrack spaces on the average of once every three years. Distribution of ballast is carried out by means of special ballast-handling cars designed to economize on labor and the use of work train service for this operation.

The Lackawanna also was one of the first railroads to recognize the wisdom of lengthening track sections, and at the same time taking heavy maintenance work out of the hands of section forces and doing it with large specialized gangs. The lengthening of its track sections took place about 20 years ago. Before this was done the road had approximately 263 track sections. The extent to which they were lengthened is indicated by the fact that today it has only 69 sections. Sections in double-track main-line territory at the present time each consist of about 15 miles of road, or, in other words, about 30 miles of main-line track.

Four-Cornered Basis for Efficiency

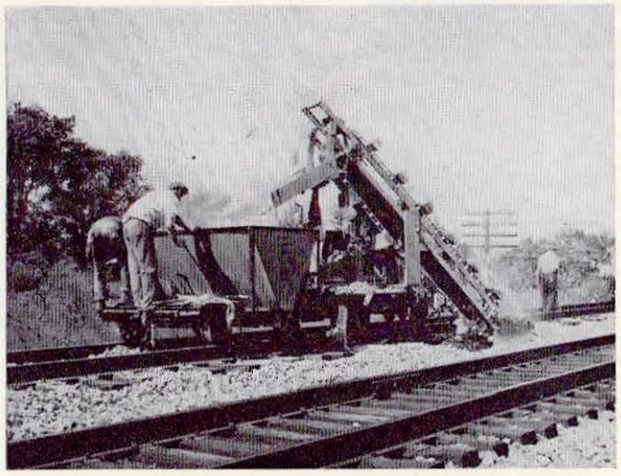
By lengthening its track sections and inaugurating the practice of doing heavy roadway maintenance work by large specialized gangs, the Lackawanna has been able to take advantage of the production-line principle in doing such work. The mass-production methods used are based on a four-cornered foundation, with one corner consisting of a high degree of mechanization, another the extensive use of highway trucks for transportation of track maintenance forces, the third the so-called "detour" system of carrying out heavy maintenance work, and the fourth the detailed programming of all such work on an annual basis.

The conduct of out-of-face maintenance work on the Lackawanna is based on the conception that the only way the work can be done at minimum cost is to make maximum utilization of power equipment. By this is meant not only the use of an optimum amount of such equipment, but also its employment in tightly organized gangs in which each step or operation is integrated with the organization as a whole. The progress that this road has made in mechanizing its track forces is indicated by the fact that, whereas in December 31, 1941, its investment in roadway machines, including highway trucks, was only $581,176, this figure had increased to $1,294,202 at the end of 1950.

So great is the motivating force behind the railroad's program of mechanization of track work that it has taken the initiative in evolving machines for performing operations for which no equipment was available on the market. Among the machines so developed is a unit for extracting from the track old ties that are to be renewed. This was soon followed by the development of a machine for inserting new ties. Another example of the Lackawanna's ingenuity in developing new equipment is a so-called ballast loader-distributor by means of which, in connection with tie-renewal and track-raising work, a windrow of new ballast previously deposited in the intertrack space is picked up and delivered to a hopper from which it is distributed evenly across the track section to provide an adequate amount of properly distributed ballast for the tie-tamping operation.

The shift to highway trucks for transportation of track forces is considered an important factor in assuring that the gangs will spend a maximum amount of the working day in doing productive work. As of December 31, 1941, the maintenance of way and structures department of the railroad had only 16 highway trucks, involving an investment of $16,960. By December 31, 1950, the number of such units had increased to 110, and the investment in them was $267,073.

The third corner of the Lackawanna's production-line methods of doing track work—the detour system—was inaugurated on a large scale on this road more than 10 years ago and is considered to have been more highly perfected by the Lackawanna than by any other line. Simply stated, the system consists of dividing the multiple-track main line of the road into so-called



The Lackawanna has taken the initiative in devising machines for specialized operations. One of these, a ballast loader-distributor, is shown here. Ballast from the intertrack space is distributed evenly across the track section

"detour" sections, five to seven miles in length, and the provision of temporary crossovers at the ends of each section to permit trains to be detoured around the length of track on which work is being carried out, thus permitting the gang to get the maximum of productive time out of the working day. What makes the use of the detour system on the Lackawanna of more than ordinary interest is the fact that the practice has the complete endorsement of the operating department, which recognizes the wisdom of substituting the single-tracking of trains for the slow orders that would be necessary if the maintenance department was required to do its out-of-face track work under traffic.

The fourth corner of the railroad's foundation for production-line methods in track work—the practice of programming its work on a detailed and precise basis*—has been followed for about 10 years. Briefly, the procedure is to determine early in the year the total amount of money to be spent for roadway maintenance work during the year, after which the amounts of the different types of work to be done are determined and detailed schedules are established for carrying out these operations. Nothing less than major swings in the business cycle or other developments of similar magnitude are permitted to interfere with the maintenance program so established.

An account of ways in which the Lackawanna's spirit of enterprise in the development of engineering practices has manifested itself would not be complete without reference to a number of other practices on this railroad. For instance, when some of the road's suburban lines in New Jersey were electrified more than two decades ago, rectifiers were used for the first time on a large scale on a railroad job of this sort for converting alternating current to direct current. Also, the Lackawanna was a pioneer in the use of Greenheart piling. All of its ferry racks in New York harbor, as well as many of its floatbridge racks, are constructed of this material.

For many years the Lackawanna has carried on extensive programs of building up battered joints by welding, using highly mechanized gangs for this purpose. Truck transportation is used for the gangs, and crawler-type tank carriers greatly reduce manual handling of the gas cylinders. The road commenced heat treating rail ends in track in 1937, and, after keeping cost and performance records over a period, it adopted this practice as standard for all new rail in 1945. About 1940 it started repairing driver burns in rail by welding. Exhaustive tests were made of this practice and the methods were altered as indicated by the results of the tests. As a result, the railroad determined that welding of driver burns is entirely feasible, economical and safe, and as a consequence an "all-out" program along this line was started in 1945.

Considerable emphasis has been placed on this road on the lubrication of the high rails on curves. Consequently, despite the adverse conditions of curvature that prevail, the changing out of rail on curves is usually required because of the crushing of the low rail rather than the wearing of the high rail. To the extent possible, worn and damaged frog and switch points are rebuilt in the field. Manganese frogs are rebuilt by welders equipped with "jeeps" on each of which is mounted a generator, which is driven by a power take-off from the engine. Switch points are rebuilt by the oxyacetylene process.

Since 1934 the road has been using corrugated-bottom tie plates. The experience on the Lackawanna is that tie plates of this type help to maintain the correct gage at smaller expense than flat-bottom tie plates, and that they do not damage the ties. It is now buying the high-eccentricity tie plate for use on the low sides of curves to retard the "bedding" of the tie plates at such locations.

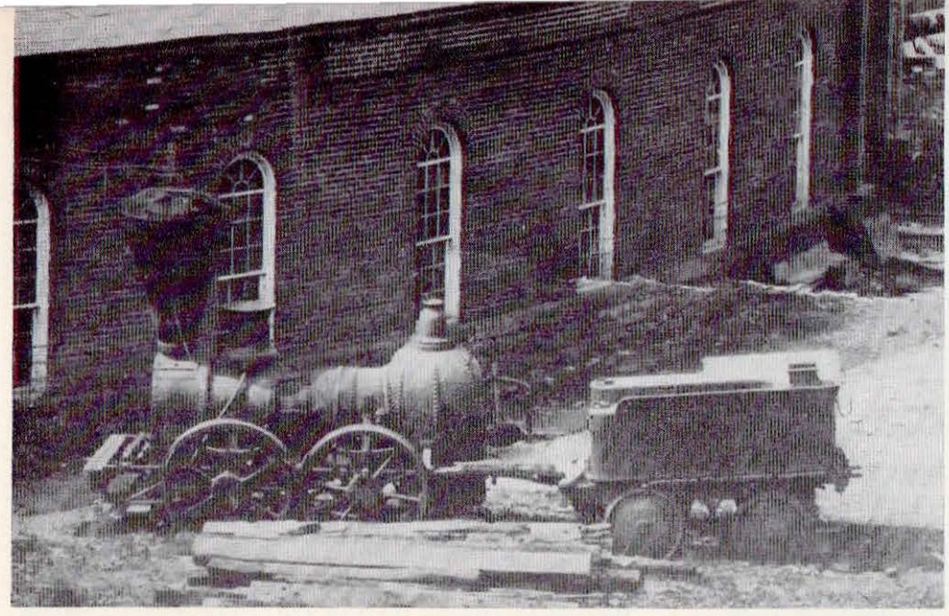
For two or three years the railroad has been experimenting with protective coatings and tie pads to prolong the life of bridge ties. Preliminary results of the tests indicate that the use of preservative coatings for bridge ties will soon be established as a general practice. The use of tie pads is reported to be still in the testing stage. Another field in which the Lackawanna has pioneered is in the use of chemicals for controlling the growth of brush along the right of way. For this purpose the company uses a derivative of 2,4-D which is applied to the foliage by a spray rig specially designed by the railroad for this purpose. Chemical weed killers have been in use on the road for many years.

Toward a Better Subgrade

Extensive programs are being carried out on the Lackawanna for widening and raising the subgrade shoulders of its roadbed to provide better support for the ballast section and at the same time to permit a reduction in the amount of ballast used. Other advantages of this practice are the provision of additional clearance and better drainage in cuts. In many locations the roadbed shoulders are being widened sufficiently to provide a roadway for the use of off-track equipment and trucks to transport men and materials. Where possible the widening of the shoulders is being carried out by means of off-track equipment.

The Lackawanna has, especially in recent years, experienced drastic changes in the character of traffic carried, largely incident to a reduction in the market for anthracite coal. To help the railroad over this difficult period the maintenance and engineering department has done more than its share by effecting economies, largely through the practices described in this article. As a result of the spirit of enterprise exhibited toward the development of economy-producing maintenance practices the Lackawanna has one of the lowest maintenance-of-way ratios of the country's Class I railroads.

*The Lackawanna's practice of programming heavy roadway maintenance operations was described in detail in *Railway Age*, August 20, 1951, along with other advanced maintenance practices in use on this road.



The Lackawanna's original locomotive "Spitfire" at its last resting place behind the Scranton roundhouse

Power Over the Poconos

The Delaware, Lackawanna & Western, in common with many American railroads, is composed of a number of smaller lines originally projected and built at different times. Motive power on these lines varied with the periods and each had its own designs to suit local peculiarities of operation.

The Lackawanna's first two locomotives were used during construction of the first section of its main line —the Liggett's Gap Railroad—for which the present anniversary is being celebrated. One was a small 4-2-0 type named "Pioneer" (commonly known as "Old Puff"), acquired in 1850 from the Ithaca & Owego; it had been built by Walter McQueen at Albany, N. Y., in 1840 and was not too well adapted to the work. The other, purchased after the Liggett's Gap was renamed Lackawanna & Western in 1851, was the "Spitfire," a second-hand 0-4-0 machine that came from the Philadelphia & Reading. It had been built in England in 1838 and was continued in service on the D.L. & W. until 1859.

Because the Lackawanna & Western joined the 6-ft. gage Erie line at Great Bend, Pa., its early cars and locomotives were made to that width of track. With the opening of the line in October 1851, road locomotives were required, so three 4-6-0 freight and three 4-4-0 passenger engines were purchased from Rogers, Ketchum & Grosvenor of Paterson, N. J. The Cayuga & Susquehanna, successor to the Ithaca & Owego, later leased by the D.L. & W., also acquired two locomotives each of the same types as the parent road. Rapidly expanding business necessitated continued purchase of more locomotives. Engines from William Swinburne and Danforth, Cooke & Co., both of Paterson, were added to those from Rogers, Ketchum & Grosvenor.

Swing to Anthracite

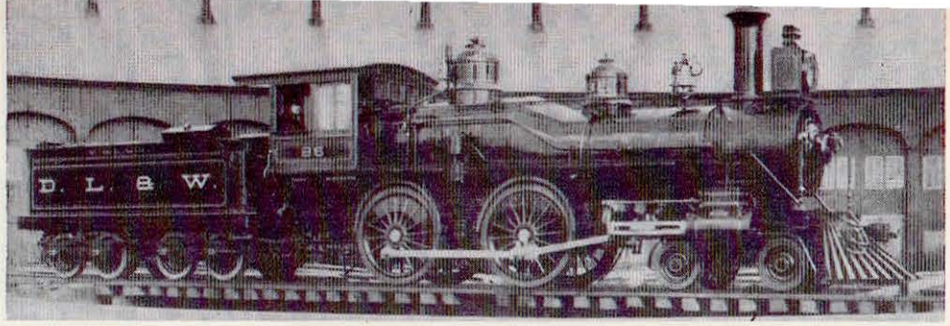
All these locomotives burned wood, but the prevalence of anthracite in the Lackawanna valley soon caused the management to investigate the possibilities of using it for locomotive fuel. An experiment was made with a new engine appropriately named "Anthracite," built by Danforth, Cooke in April 1854. It was similar to some locomotives then being operated by the Philadelphia & Reading, which was already burning hard coal. Continued search for coal-burning engines caused the road to purchase the "Carbon," an 0-8-0 Camel engine, built by Ross Winans of Baltimore, in October 1854. It was practically a duplicate of the heavy freight locomotives popular on the Baltimore & Ohio; five more were delivered to the D.L. & W. in 1856.

Swinburne, Smith & Co., of Paterson, also tried their hand and built an 0-6-0 coal-burning freight locomotive in 1856, named "Lehigh," which was followed by five others of the same construction in the next year. These engines somewhat resembled the B. & O. machines, but neither type proved greatly successful as anthracite burners.

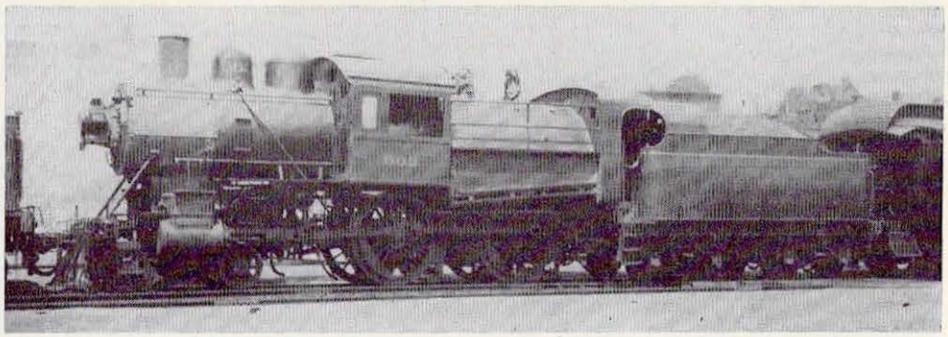
In the meantime, while the road continued to buy wood-burning 4-6-0 engines for freight service, the builders continued experimenting; and in 1855 Danforth, Cooke finally constructed two 0-6-0 engines, "Delaware" and "Black Hawk," that seemed to point in the right direction. Two more locomotives based on the knowledge of the combined experiments were constructed by Danforth, Cooke in 1857. These were appropriately named "Investigator" and "Decision" and had a 4-6-0 wheel arrangement. The success of these machines firmly established the 4-6-0 hard-coal burning locomotive on the D.L. & W.; a further development was the "Moses Taylor," pictured on page 72, built by Danforth, Cooke in 1859. Up to this time no passenger engine had been built to burn anthracite.

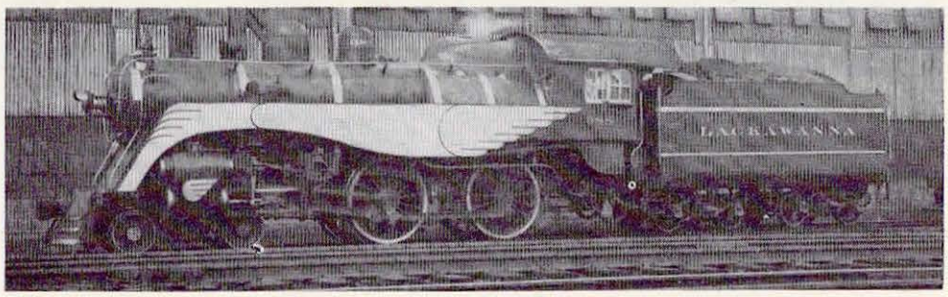
The 4-6-0 type proved to be most popular for freight until 1870, when the first 2-6-0 was built for the D.L. & W. Thereafter, for 22 years practically all its new freight engines were either 2-6-0 or 2-8-0 types.

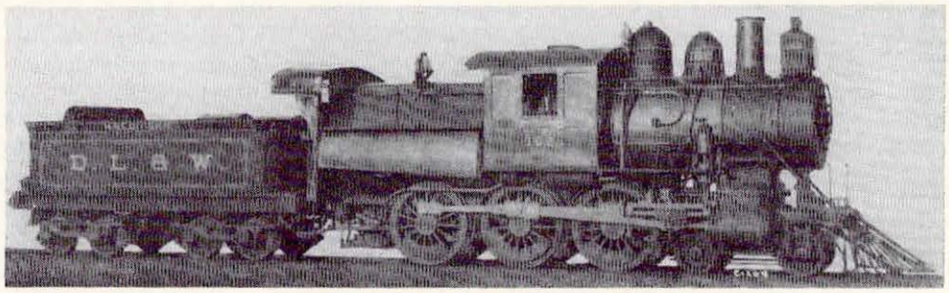
Another change in motive power occurred in 1876, when the D.L. & W. 6-ft. track gage was altered to standard gage. In anticipation of this event many locomotives had been built that were readily convertible with a minimum of shop work. One of the passenger



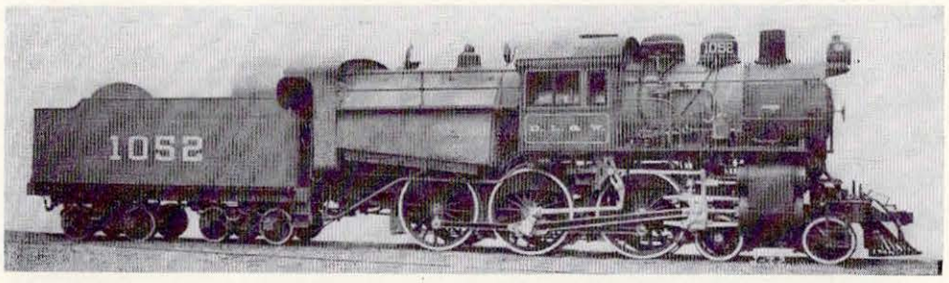
The three locomotives pictured at the right represent an evolution in design of Lackawanna passenger power. At the top is shown the former Morris & Essex Division No. 86, built at the Kingsland, N. J., shops of the railroad. The center picture, also one of the eight-wheel passenger locomotives, shows a "Mother Hubbard" cab arrangement with the Wootten type fire box. The lower picture is one of the rebuilt "streamlined" eight-wheelers after having been changed back to a single-cab design over the wide firebox

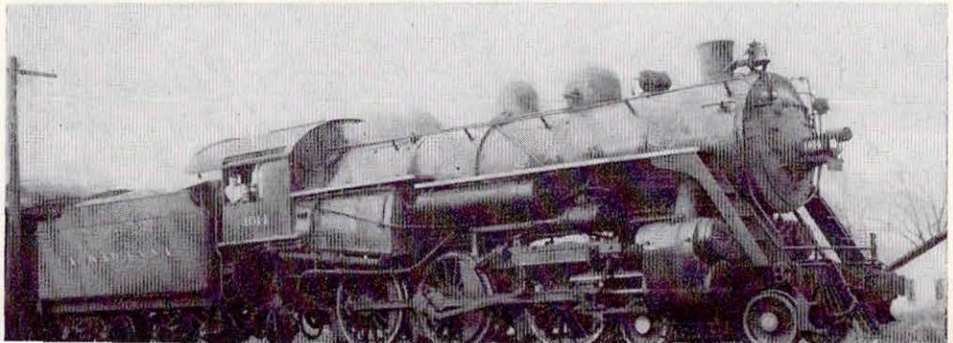


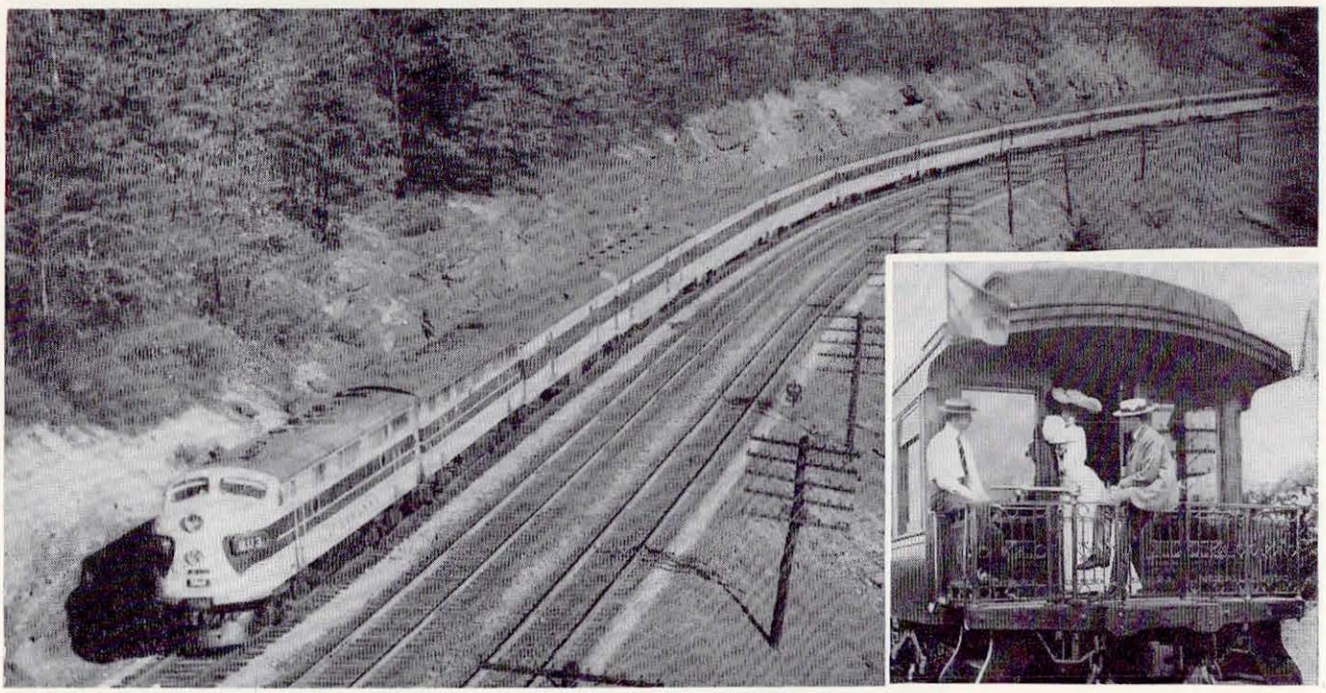




Another example of design evolution is this group of ten-wheel (4-6-0) type passenger locomotives. At the top is Morris & Essex No. 162 built by the Cooke Locomotive & Machine Co. in 1896. Locomotive No. 1052, in the center, was originally built by the Rogers Works of the American Locomotive Company for high-speed passenger service and a similar locomotive of the ten-wheel type, shown at the bottom, was rebuilt about 1931 with the single-cab arrangement







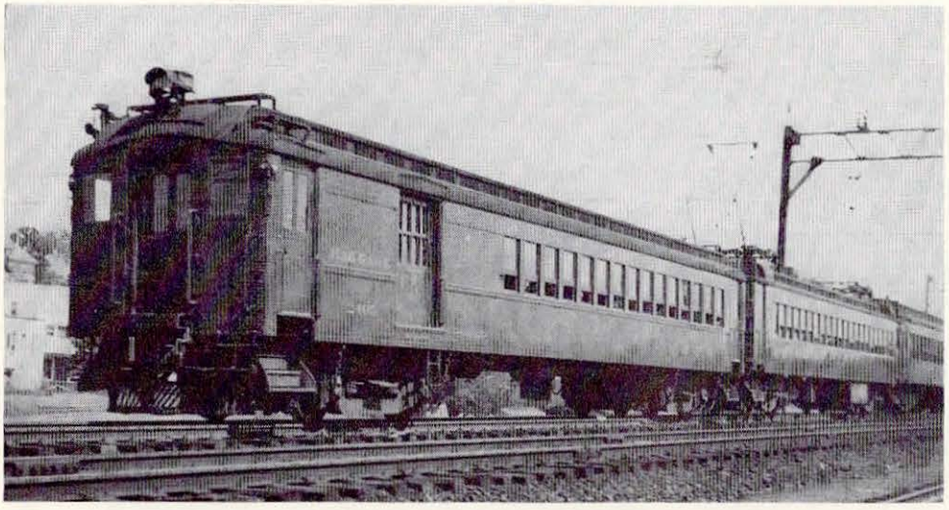
Fifty years of "Phoebe Snow". The original "gal" in 1900 and the Lackawanna's new train of today

engines changed was the "Sam. Sloan," named for the president of the railroad. This engine had been a wood burner and was rebuilt to use lump anthracite at the time its gage was changed.

Most of these Lackawanna lump burners, as they were called, had long, narrow fireboxes equipped with water-tube and bar grates. This style remained in service for many years, until the advent of the Wootten firebox, with its wide grate intended to burn culm anthracite. The D.L. & W. first tried this type of boiler in 1882, when two 2-6-0 locomotives were built, followed in 1887 by two 4-4-0 passenger engines. Many older single-cab lump burners were rebuilt with new Wootten type boilers and their useful life extended. The success of these engines caused the railroad to concentrate upon wide-firebox, double-cab construction until 1907, when the last double-cab engine was built. The wide firebox, however, was applied to many single-cab locomotives in later years.

A general consolidation of the various lines leased by the D.L. & W. took place in 1899 and the new management inaugurated a system of ordering locomotives according to a common standard instead of using separate designs for each division. In 1900 the Lackawanna owned 600 locomotives; 84 per cent of these were on the three principal parts of the road, the Main Line, Morris & Essex and Buffalo divisions. Nearly 70 per cent of these were old, of light construction and moderate power, so a program of acquiring modern locomotives was planned.

Because of road restrictions, reasonably light axle loads prevailed, and it was not until 1912 that the Lackawanna purchased its first modern locomotive equipped with trailing wheels. In 1899 the heaviest engines on



The Morris & Essex division was electrified in 1930, using multiple-unit cars with 3,000-volt d.c. overhead catenary power distribution

the road were 15 4-8-0 machines weighing 205,000 lb. and used in pushing service out of Scranton. They were built by the Brooks Locomotive Works at Dunkirk, N. Y., and five more came from the Dickson Manufacturing Company of Scranton in the following year. Thereafter the heavier freight engines used on the road were 2-8-0 types, until in 1912 the first 2-8-2 type was built. Between 1903 and 1911 several orders were placed for light freight engines of the 2-6-0 wheel arrangement. These were of both the wide firebox, double-cab type and single-cab type and were scattered over the system in local freight and branch-line service.

The necessity for heavier freight engines became apparent when the New Jersey cut-off was finished and 15 2-8-2 locomotives came from Schenectady in 1912, followed by several orders up to 1924, when the last of this type was purchased, the road then having over 100 in service. In an endeavor to secure a more economical freight engine, the Lackawanna had 35 4-8-2 three-cylinder locomotives built by the American Locomotive Company, Schenectady (N. Y.) Works in 1926 and 1927 and they were in use until recent years. The latest steam freight locomotives were of the 4-8-4 wheel arrangement and were acquired from 1929 to 1934. These locomotives were also used in passenger service prior to the advent of diesel power.

Switching and Passenger Power

Following the standardization of motive power in 1900, a large group of 0-6-0 types were built between 1901 and 1911. Approximately 120 engines of this type were in service, half of which had wide fireboxes. Supplementing these were some 0-8-0 transfer locomotives, built between 1906 and 1917. These were augmented from 1929 to 1935 by 60 0-8-0 locomotives which were rebuilt from 4-6-2 and 2-8-2 road engines.

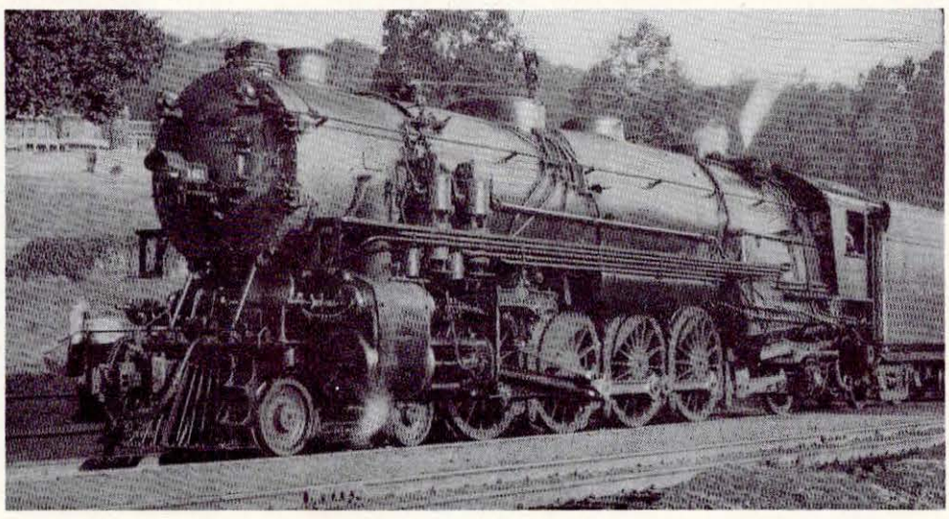
At the turn of the century the Lackawanna ordered a number of 4-4-0 type locomotives capable of handling express trains. These were duplicated over the years from 1901 to 1911. In 1900 seven engines of the 4-6-0 type were built, but these engines did not perform too well and were relegated to heavy suburban runs. A newer type of 4-6-0, acquired in 1905, hauled through passenger trains successfully. They were duplicated in a number of orders until 1908. In 1912 the first 4-6-2 type engine was placed in service. These locomotives had extremely wide fireboxes, with the cab placed at the rear, a style that in later years was followed in rebuilding some of the 4-4-0 and 4-6-0 double-cab passenger engines. About 80 4-6-2 locomotives were acquired between 1912 and 1924 in a number of sizes to accommodate varying traffic. One group was built with comparatively small driving wheels and large cylinders and boiler, for either light freight or passenger service.

Increasing weights of trains caused the D.L. & W. to purchase five 4-8-2 type locomotives in 1924 and these were augmented by five more in 1925. The latter engines were three-cylinder machines, but frequent mechanical failures necessitated a rebuilding to two cylinders in 1930 and 1931. A group of five 4-8-4 passenger engines with large drivers came on the road in 1927 and these were the last of that type intended for through trains prior to the building of the dual purpose 4-8-4's already mentioned.

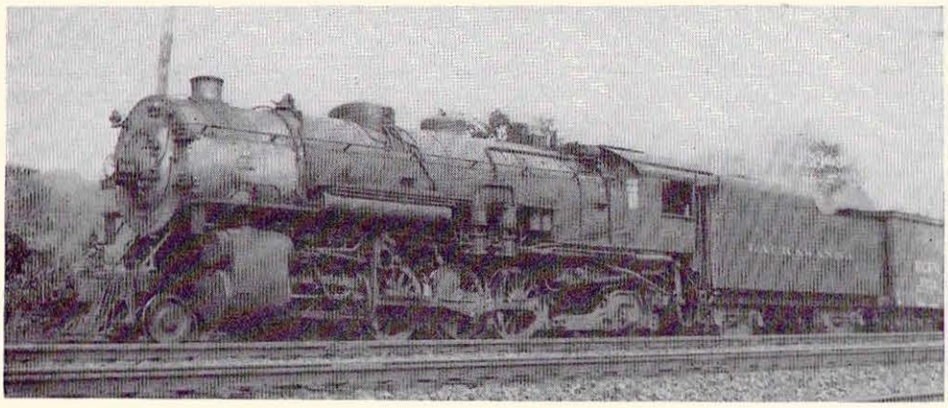
The last steam passenger locomotives constructed for the D.L. & W. were five 4-6-4 heavy duty machines that came on the road in 1938. They ran in through service for a while and later descended to suburban service.

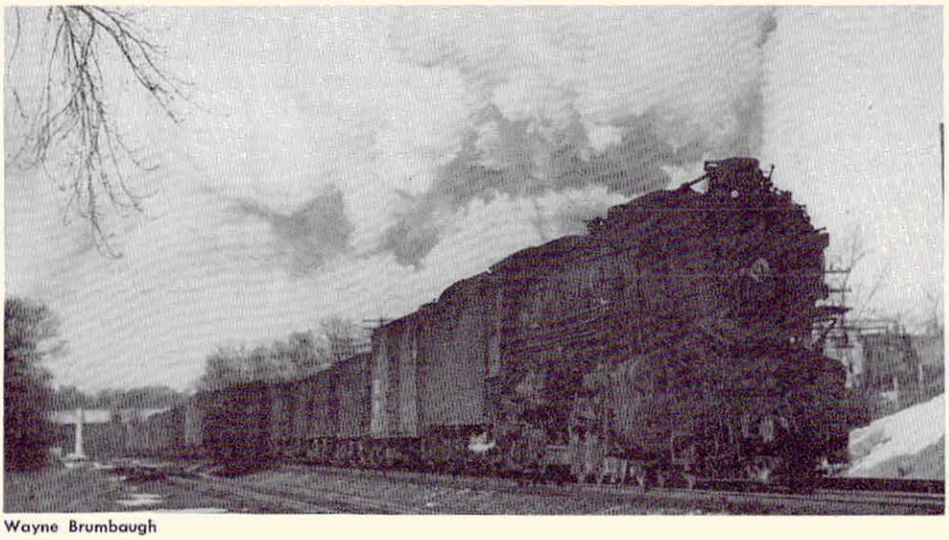
The D.L. & W. has always been noted for straightforward and conservative design of steam locomotives. Only two compound locomotives were ever built at a time when this type of engine was being ordered in large numbers on other roads. The only deviation from conventional construction was when the road purchased the three-cylinder locomotives, but they were not repeated. D.L. & W. never had any 4-4-2, 2-6-2 or articulated engines, which types were common on other neighboring roads.

An interesting sidelight on the motive power problem of the Lackawanna is that, about 1921-22, extensive studies were made with the objective of electrifying the mountain grades east and west out of Scranton. In 1922 this project was finally abandoned and the operation on these heavy grades was simplified by the purchase of 50 heavy 2-8-2 type locomotives, which made it possible to handle the average freight train with two locomotives instead of five or six of the older units. The higher locomotive-mile costs of the proposed electrification, in relation to existing traffic volume at that time, may have been one of the factors which weighed against electrification. So, today, with the diesel-electric, which after all, is but an electric locomotive carrying its own power plant, the Lackawanna has finally "electrified"



The Lackawanna, like a few other railroads, tried out the three-cylinder design in both passenger and freight service. Here is Locomotive No. 1451 at Paterson, N. J.





Wayne Brumbaugh

About 1921, the Lackawanna considered the electrification of the Pocono Mountain grades, in order to eliminate the use of three and four pushers on a single freight train. For economic reasons, the electrification program was abandoned and heavy Mikados such as the one at the top left were built by the American Locomotive Company for use on these grades. Two of these 2100-type locomotives were then able to handle the same train as four or five Consolidation types. The most modern Lackawanna steam freight and passenger power, the 1600 Class 4-8-4's, is shown in the lower picture

its mountain grades with a power facility having satisfactory economic and operating characteristics.

During the years 1929-30 the Morris & Essex division was electrified from Hoboken to Dover, N. J. To operate this service 141 motor cars were built new and 142 coaches, parlor cars and combine cars were rebuilt as trailers. The motor cars were built to operate on 3,000-volt direct current drawn from an overhead wire.

The first oil-electric locomotive on the D.L. & W. was a 300-hp. 66-ton switcher built in 1926. Two combination trolley-electric-battery-oil locomotives were built in 1930 for freight transfer and switcher service. These could operate from the 3,000-volt d.c. overhead wire or by their own engine. It was not until 1933 that the road bought another diesel-electric switcher, which was followed in 1934 by seven others like it. These were put at work in Hoboken terminal, replacing several 0-6-0 steam switchers. Since that time many other diesel-electrics have been purchased.

All the road's freight and passenger diesel-electrics are of the 1,350-, 1,500- or 2,250-hp. single-unit types.

Motive power on the M. & E. consisted in the beginning of two small 4-2-0 locomotives built by Seth Boyden, Newark, N. J. The 4-4-0 type came into use quite early and continued to be the favorite passenger engine until 1899. Some 4-6-0 and 2-8-0 engines were in freight service, but most of this service was operated with 2-6-0 locomotives. After wood burning was discontinued, all engines burned lump anthracite, except a few culm burners with wide fireboxes. After the consolidation with the main line, more modern locomotives began to be used, but some of the original M. & E. engines were in light service for several years after.

When the New York, Lackawanna & Western was opened to traffic in 1882 from Binghamton to Buffalo, new motive power was purchased to operate it, but eventually main line engines began to be used and all original N.Y.L. & W. machines were rebuilt or scrapped.

Other lines now in the Lackawanna fold that had their own motive power were the Lackawanna & Bloomsburg; the Syracuse, Binghamton & New York; and the Oswego & Syracuse.

Passenger and Freight Cars

Lackawanna's rolling stock has always been kept abreast of the times, in both passenger and freight service. The road was one of the first to use all-steel cars, which, incidentally, were open platform suburban coaches built by the American Car & Foundry Co. in 1911 (see picture on page 72). Through-line equipment soon followed and today the latest designs of lightweight passenger cars make up the consist of the "Phoebe Snow" and other through trains.

Freight equipment is about evenly divided between open top and closed cars. The large amount of coal originating on the line requires over 6,000 hopper cars to handle the traffic on "the road of anthracite."

Old and new heads of A. T. C., left to right: *Renamed chairman of the board:* J. M. Fitzgerald, vice-chairman, Eastern Railroad Presidents Conference; *retiring president:* J. P. Krumech, general traffic manager, American Car & Foundry Co.; *new president:* Fred E. Luebbe, general traffic manager, Kroger Company; *re-elected secretary-treasurer:* R. A. Ellison, who is the manager of the transportation department of the Cincinnati Chamber of Commerce

A Railway Age Convention Report

Traffic Clubs Look at Themselves —And at the Railroads

[The Associated Traffic Clubs of America is just what its title says it is. The organization's main purpose is to help the 175 member clubs to increase their activities and widen their influence. In short, A.T.C. is a "clubs' club." Consequently, its annual convention consists chiefly of consideration of problems of traffic men *as officers of local traffic clubs*. Sessions are divided into simultaneous meetings of groups on special topics—like club publications; council of club presidents; and education and research.

Many railroad traffic officers are active in traffic clubs; they hear about the "operating details" discussed in Seattle in their clubs and as delegates. Hence this *Railway Age* convention report is confined to the relatively limited portion of the convention devoted to the field of transportation as a business, rather than to the equally important business of running good traffic clubs.—EDITOR]

More than 700 delegates of local traffic clubs, other visiting members and guests from the traffic and transportation fraternity gathered in Seattle, Wash., September 24-26, for the 28th annual meeting of the Associated Traffic Clubs of America. This first annual session to be held in the Pacific Northwest was marked by an unusual share of attention to the problems of the railroads, as distinct from other carriers, and by a lively interest in strengthening traffic clubs as media of education and training for younger personnel.

Banquet Speaker William F. Knowland, United States senator from California, could not be present, because an important tax bill was before Congress, but his address on "American Foreign Policy" was "piped" by telephone from Washington, D. C., to the thousand dinner guests in their places. John M. Fitzgerald, chairman of the board of A.T.C. for many years, and vice-chairman of the Eastern Railroad Presidents' Conference—also tied up in Washington, by reason of the railroad wage case—introduced Senator Knowland.

Presiding over all sessions, in the absence of the chairman, was President J. P. Krumech, general traffic manager of the American Car & Foundry Co. Elected officers for the forthcoming years were: President—Fred. E. Luebbe, general traffic manager of the Kroger Company; executive vice-president—E. George Siedle, general traffic manager of Armstrong Cork Company; secretary-treasurer (re-elected)—R. A. Ellison, manager of transportation department, Cincinnati Chamber of Commerce. New regional vice-presidents are: C. J. Goodyear, traffic manager of Philadelphia & Reading Coal & Iron Co., and Ben J. Tappe, vice-president, Seattle Terminals, Inc. New board members are: Leland D. Smith, traffic manager, Consolidated Chemical Industries, and Ernest D. Grinnell, general traffic manager, Gaylord Container Corporation. Mr. Fitzgerald was unanimously renamed chairman of the board.

Railroads' Dilemma

Col. Robert S. Macfarlane, president of the Northern Pacific, told the traffic men and women that, although the railroads are enjoying boom traffic, their net return is at unsatisfactory levels. Ruling out inefficiency and overcapitalization as significant factors in the case, the speaker stressed adequate rates and fair regulation as the only means of bringing the railroads to a state of vigorous health. He characterized as "no less than

Three principal addresses at the convention were by, left to right: Robert S. Macfarlane, president, Northern Pacific; Lowe P. Siddons, chairman, executive committee, National Industrial Traffic League; Senator William F. Knowland

plain, old-fashioned confiscation" denial to the roads of the opportunity to earn a fair rate of return.

In view of the role of the N. P. as a big grain carrier, Mr. Macfarlane had much to say about the car supply for handling the harvest. He blamed much of the "recurring transportation crises in the wheat areas" on "a tremendous stepup in production, plus revolutionary changes in harvesting and marketing methods." Nevertheless, he said, "the [railroad] industry is continuing to build freight cars to the full capacity of all plants, limited only by shortages of materials and labor.

"Let me illustrate how material shortages slow up freight car production: More than a year ago, requisitions were prepared for materials required for building 500 box cars in Northern Pacific shops. The program called for start of construction last June 1, with completion of the order by August 24—in time to help move this year's grain crop.

"As of today, we haven't turned out one finished car in this program, simply because of our inability to obtain delivery on certain essential items of steel. Materials were standing on the floor of the shops, useless until matching materials were received. If we're fortunate, we'll complete the first of those cars next month, but the bulk of the order will be received too late to be of much help in moving this year's crops."

The speaker referred to the proposal of "one prominent industrial traffic manager" that government regulation be changed to permit prompt rate advances when major costs increase—such as wages—by short notice tariffs accompanied by an explanatory statement. Appropriate hearings, under this proposal, would be held "subsequently."

A Customer on Railroad Labor

Problems in the transportation business which are important but which do not figure prominently in public discussion constituted the theme of a talk by Lowe P. Siddons, who represented the influential National Industrial Traffic League as chairman of its executive committee, but who presented his views as his own. The speaker—who is traffic manager of Holly Sugar Corporation—dealt with the (1) need for an adequate budget for the Interstate Commerce Commission; (2) necessity of reducing "deficits" from passenger-train service—particularly from "head-end" traffic; and (3) danger of railroad labor "pricing itself out of the market."

On the latter point Mr. Siddons took the view of the customer who finds that the price structure of the business he patronizes is getting out of line with that of its competitors because of restrictive working rules and obsolete definitions of a day's work. The speaker devoted himself largely to the rules covering operating employees in train and yard service; citing testimony before emergency boards to bring out work actually performed by them; and raising the question whether the operating brotherhoods are behaving as realists.

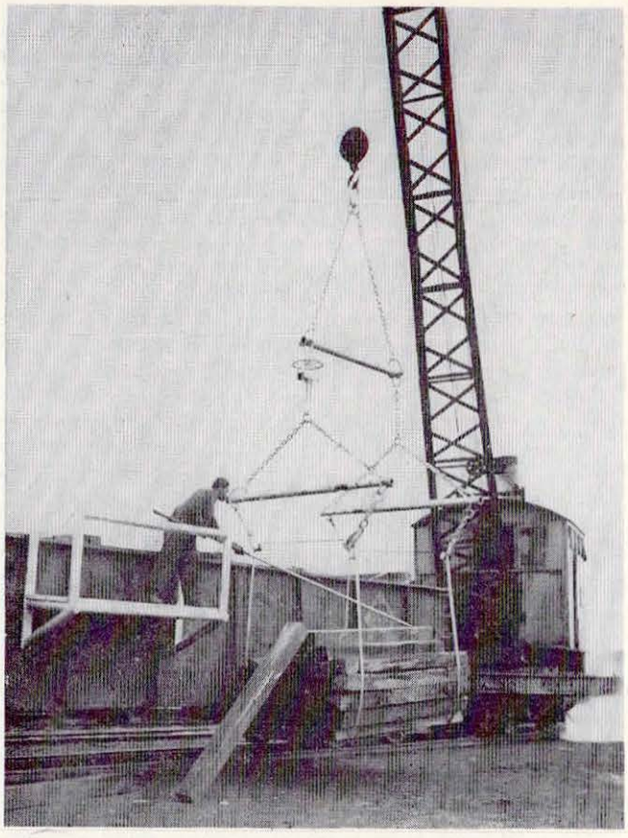
"I think railroad labor should study carefully the competitive situation and the rates of pay that can be supported from the rates for transporting passengers and freight. This should be considered along with what the public can afford to pay if they expect the fountainhead of their employment—the railroads—to compete successfully for business and keep them employed."

In presenting these opinions, Mr. Siddons emphasized his personal belief that "the hands of railroad management are not entirely clean" and that "it does not always meet the unions half-way." Nevertheless, "the unions can be characterized as the more stubborn of the two parties."

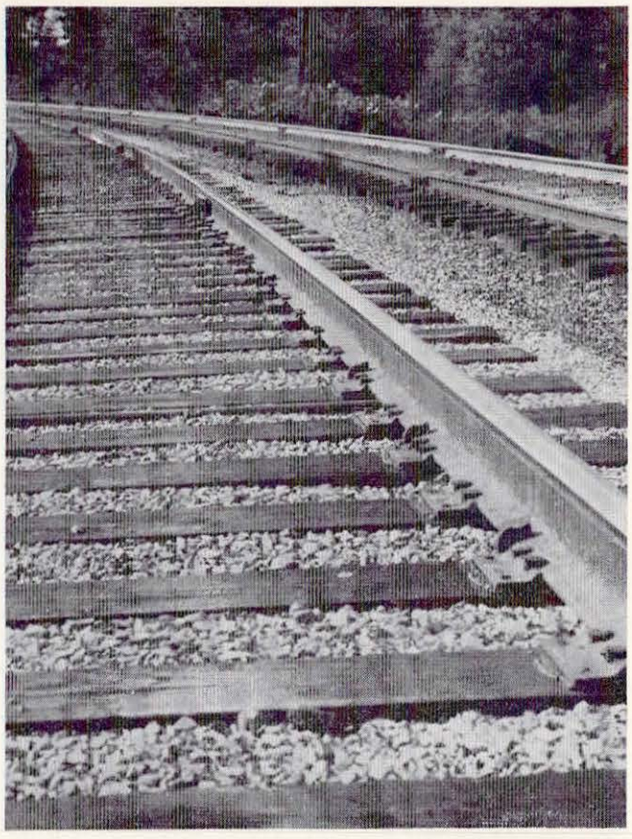
The N.I.T. League officer blamed a number of parties and factors for the passenger service deficit—including a subsidized parcel post, shortsighted state commissions, and local pride. "Both mail and express service, according to my training, should be required to pay their way and show a profit. Shippers of freight or express should not be forced to subsidize the expense of transporting the mail or express. . . . A long-standing and consistent platform of the League is one of opposition to all subsidies by the government, and it favors sound conditions and sound principles in every branch of transportation, including the U. S. mails."

Where railroad traffic has largely gone to motor vehicles, as on branch lines, "there seems little reason for shippers opposing the abandonment of such service or lines, as the case may be. There should be an awakening on the part of the public to this important subject. It is quite possible that our laws should be liberalized so that regulated authority will have a wider discretion in such important matters."

To the Chicago Transportation Club went A.T.C.'s plaque for the best traffic club publication in the country in 1951—called an "Edwin" after the late E. C. Hencken, general freight agent for the Katy at Cincinnati. Certificates of special merit for "a high degree of sustained superiority achieved during 1951" went, on a regional basis, to the Cincinnati Traffic Club; the Transportation Club of Louisville, Ky.; the Traffic Club of Kansas City; the Oakland (Cal.) Traffic Club; and the Women's Traffic Club of Long Beach-Los Angeles Harbor.



Unloading crossties from a bundle wrapped with steel bands at the treating plant. The experience of the Nickel Plate with this method was described by F. S. Shinn, assistant tie and timber agent of that road



This is a section of the test installation on the Louisville & Nashville of various types of tie pads and hold-down fastenings for tie plates. The installation was described by L. L. Adams, chief engineer, Louisville & Nashville

A Railway Age Convention Report

Tie Producers Meet at Cincinnati

The 33rd annual convention of the Railway Tie Association was held at the Netherland Plaza Hotel, Cincinnati, Ohio, September 26-28. The attendance totaled 352 members and guests, of whom 99 were railroad men. The meeting was directed by the president of the association, Walter P. Arnold, vice-president of Koppers Company, Pittsburgh, Pa.

Several of the addresses were of direct interest to railroad men. Dr. Julius H. Parmelee, vice-president and director, Bureau of Railway Economics, Association of American Railroads, spoke on "Prospective Railroad Earnings and Expenditures"; John E. Tilford, president of the Louisville & Nashville, on "The Railroad Outlook"; W. G. Powrie, chief engineer of the Chicago, Milwaukee, St. Paul & Pacific, on "100 Years of Ties on the Milwaukee"; L. L. Adams, chief engineer of the L. & N., on "Test of Methods to Prolong Service Life of Ties in Track"; M. G. Kirk, of Pittsburgh Screw & Bolt Corp., on "Service Life of Doweled Ties"; and Paul D. Brentlinger, forester of the Pennsylvania, on "Problems of Procurement of Crossties."

In addition, banding of crossties was discussed in two papers, one by F. S. Shinn, assistant tie and timber agent of the Nickel Plate, entitled "Our Experience With Banding," and the other by F. E. Houck, manager of sales, Steel Strapping Division, Brainard Steel Company, entitled "Savings to Be Effected by Banding." Also, four addresses were devoted to hickory crossties—one by W. E. Kemp, superintendent of the Norfolk & Western treating plant, Norfolk, Va., entitled "Experiences of the N. & W."; one by Buford Holley, of T. J. Moss Tie Company, entitled "More Use of Hickory Ties from the Standpoint of Conservation"; a third by Dr. George H. Englerth, Southeastern Forestry Experiment Station, U. S. Department of Agriculture, entitled "What the Record Reveals on the Use of Hickory"; and the fourth by Monie S. Hudson, of Taylor-Colquitt Company, on "Vapor-Drying Hickory Ties."

Committee reports of particular interest to tie users were those of the Committee on Checking and Splitting of Crossties, of which J. A. Vaughan of Southern Wood Preserving Company was chairman; on Mechanical

Handling of Crossties, of which M. L. Wilson of Kirby Lumber Corporation was chairman; and on Timber Conservation, of which D. B. Mabry of T. J. Moss Tie Company was chairman.

In the election of officers W. J. Chambliss, Jr., of Bond Brothers, Louisville, Ky., was advanced from second vice-president to president; Harry Dunstan of Southern Wood Preserving Company, Atlanta, Ga., was elected first vice-president; and J. E. Peterson of Gross & Janes Company, St. Louis, Mo., was elected second vice-president. Elected to the Executive Committee were Mr. Hudson; Meyer Levy of T. J. Moss Tie Company, St. Louis; Gilbert Callicott of Potosi Tie & Lumber Co., St. Louis; and Frank Campbell, Jr., of W. B. Crane Company, Chicago. Roy M. Edmonds was re-elected secretary-treasurer by the Executive Committee.

Parmelee Appraises the Future

Dr. Parmelee reviewed the trend of railway traffic, revenues and earnings from 1936 to 1950, and in this connection pointed out how the "rise in railroad costs has outstripped corresponding increases in rates and charges." He presented statistics showing the extent to which the market for crossties has declined in recent years. Although there was a reduction of only 5.2 per cent in the number of crossties in maintained track from 1927 to 1950, the number of crossties laid in replacement declined 61.1 per cent during the same period and the number of crossties laid in replacements per mile of track dropped 58.6 per cent. In developing the thought that the decline in the market for ties was due at least in part to the longer service life now being obtained, Dr. Parmelee presented a tabulation showing that, with the addition of one year to average tie life, the potential market decreases a maximum of 2.3 million ties per year when the tie life is increased from 20 to 21 years, and a minimum of 1.1 million ties per year when the tie life is increased from 29 to 30 years.

Dr. Parmelee called attention to "some encouraging features" in the future market for crossties. Among these, he said, are the permanency of the market, the fact that the downtrend in tie purchases has been checked, and the presence of considerable deferred maintenance in the present tie condition.

Tilford Also Looks Ahead

Mr. Tilford first undertook an appraisal of the railroads' short-range prospects, which are "dominated by the defense program and its effect on general business activity." He feels that there will be "a rising tempo of business as defense production gets further along, and that by the first of the year we will have industry humming." He expressed the hope that "an increase in tonnage will offset in a large measure our inability to further increase our rates, and that our revenues will enable us to buy more crossties and do more track work so as to keep our properties in shape to handle all business offered."

Turning to the long range prospects for the railroads, Mr. Tilford showed that "the railroads had not lost ground in moving their part of the country's expanded commerce."

To portray "their full, potential capacity to perform a mass transportation job," Mr. Tilford cited the performance of the roads during World War II and described the extensive improvement programs they have carried out since, noting how the latter have resulted in "notable progress" in operating performance.

Recounting the experience of the Milwaukee with the preservative treatment of crossties, Mr. Powrie said that the zinc-chloride treatment of various species of crossties came into prominence on his road in the early years of the century, and that ties treated by this method showed an average life of 17½ years for pine, 22 years for red oak, and 13¾ years for beech. The use of zinc-chloride-treated ties was continued on the Milwaukee as late as 1935, although the use of ties so treated diminished rapidly after 1926 when the road started to use 50/50 creosote-petroleum treatment of fir ties on its western lines. After experimenting with various net retentions of creosote-petroleum mixtures, the road standardized, in 1944, on 8 lb. of the 50/50 mixture.

Mr. Powrie said that the effect of tie treatment, "has been very gratifying." Whereas the road found it necessary in 1928 to renew about 4½ million ties, average renewals for the past five years have been about 1,200,000 ties, approximately an average of 83 ties per mile of all tracks. This would indicate, according to Mr. Powrie, "that we might expect an average service life of at least 30 years, and I am confident that the service life will increase as the effects of heavier rail, larger tie plates and other new and improved methods of roadway maintenance have been fully realized."

Expects 40-Year Tie Life

In his address on "Tests of Methods to Prolong Service Life of Ties in Track," Mr. Adams expressed the belief that, "with methods being developed for protecting ties in track from mechanical wear, along with improved methods of preservation, we should be able to increase average tie life to 40 years, thereby requiring an annual replacement of 24,825,000 ties," or an annual saving as compared with 1950 of $28,339,265. He went on to describe the test installation of hold-down fastenings made on the L. & N. under the sponsorship of the Committee on Track of the American Railway Engineering Association. When this test was first installed in 1947-48, 27 different types of construction were used, including various compounds applied to the ties under the tie plates, a variety of tie pads, hold-down fastenings of several designs and several types of clips. Additional types of tie pads, tie coatings, hold-down fastenings for tie plates, and rail anchors have since been added to the test installation.

Mr. Adams noted that to date "no tie abrasion has been detected under any type of pad," except a rubber-asbestos type which is no longer manufactured. In general, he said, the special fastenings have shown a reduction in plate cutting as compared with cut-spike construction. However, since the first installations of this test have been in track only four years, no definite conclusions can be reached. Mr. Adams expressed the opinion that another five or six years must pass before definite facts can be established.

Mr. Kirk discussed early test installations of drive dowels on various railroads and the results to date. In spite of the cost of the dowels, Mr. Kirk said, they are being used on an increasing scale. Although the cost of the dowels has increased about 60 per cent during the past 10 years, the cost of installation, he said, has been drastically reduced by mechanical methods of drilling and driving.

Problems of Buying Ties

The determination of delivery dates, the formulation of the basic prices, and the problems arising when producers cannot supply ties of the species and in the quantities required by the railroads, were among the

aspects of the problem discussed by Mr. Brentlinger. He also touched on the difficulty of establishing long-range buying programs for ties. Inspection problems, said Mr. Brentlinger, are innumerable in a tie shortage. Some of them could be eliminated, he said, by a completely clear understanding of the specifications. Many misunderstandings regarding inspection are created, he continued, because the function of a tie in the track is not known to the yard buyer, or field representative. It is his "firm belief that a better understanding of why size tolerances, length tolerances and loading requirements are necessary, and the importance of a crosstie in the track, will lead to the elimination of many inspection problems."

Mr. Hudson's discussion of vapor-drying of hickory ties dealt largely with results of a test of this method of seasoning hickory ties to determine its effect on the prevention of checking and splitting. The test was made, because of "the very effective results obtained in reducing checking and splitting in the seasoning of oak ties by use of the Vapor-Drying process," as a result of which it was felt that the process would be particularly desirable for the drying of hickory since its tendency to check and split in air seasoning is even greater than that of oak. Mr. Hudson presented photographs to indicate that none of the Vapor-Dried hickory ties show "the effects of checking and splitting that usually take place when hickory crossties are air seasoned."

The experiences of the Nickel Plate with the banding of crossties were described by Mr. Shinn. Briefly, this method consists of binding tramloads of ties into bundles at the treating plant by special bands, and shipping them in these bundles for distribution along the right of way

W. J. Chambliss, Jr.
President-Elect,
Railway Tie Association

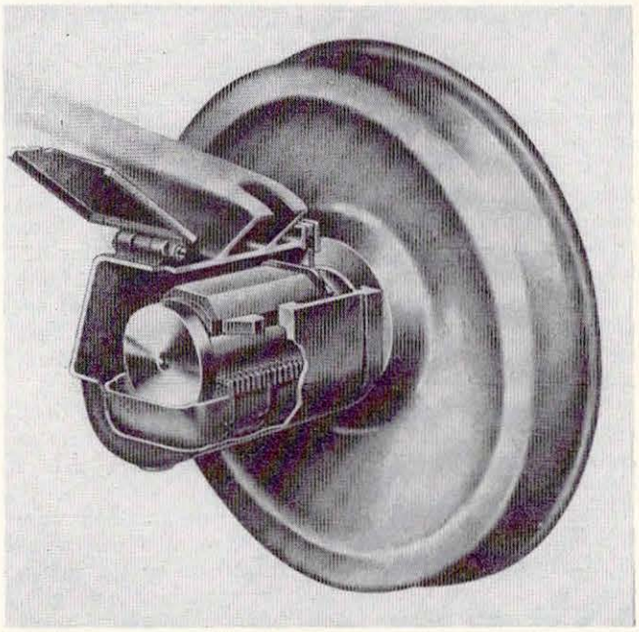
either as bundles or singly. The first 10,000 ties banded on the Nickel Plate were unloaded along the right of way in October 1950. These were unloaded as bundles at intervals of 1,000 to 2,000 ft. for the section foreman to obtain as needed. Another 14,503 banded ties were unloaded in May of this year. Of these, 3,303 were unloaded singly and "spot placed" approximately 110 ties per mile. The labor cost of unloading and distributing the latter ties was $0.29 per tie, to which must be added $0.046 per tie for the bands, giving a total cost of $0.336 per tie. This compares with a cost of $0.451 per tie for unloading them in the conventional manner, based on 1949 performance.

New Device . . .

Package Type Waste Retainer Tested on Two Roads

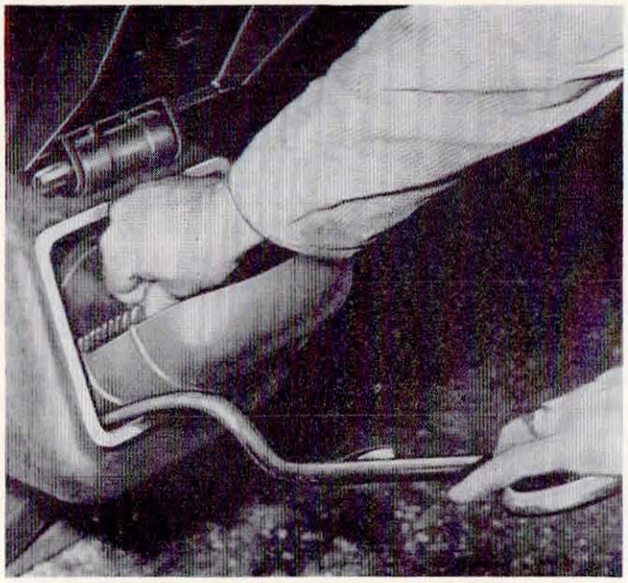
One of the newer developments for combating waste grabs, displacement of waste, hot boxes and other journal troubles, is a package type waste retainer developed by the Hulson Company, Chicago, and included in the Association of American Railroads' list of packing retainer devices approved for roads desiring to use them as per Interchange Rule 101. This waste retainer and container is made of oil-resistant synthetic rubber with sufficient resilience to hold the waste against the full length of

Diagrammatic view of the operation of the Flex-Pak in keeping waste in place

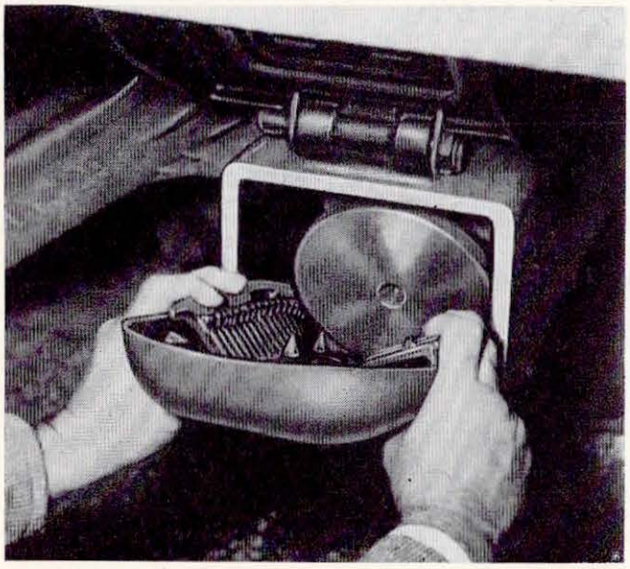


Cutaway view of a journal box showing the Hulson retainer in place

Bottom view of the package retainer showing the trough for added resiliency and the holes in the trough which permit waste to contact free oil in the bottom of the journal



By using a packing iron underneath the retainer to work it into place, it can be forced in with the free hand



After all packing is removed and the bottom of the journal box cleaned, the Flex-Pak is wiped with oil, the combs folded downward at the fillet end, and container stuffed in the box

the journal at the proper pressure for adequate lubrication.

The container, trade-marked Flex-Pak, was originally designed in early 1947, and the first application was made in October 1948 on the Chicago & North Western. Tests on this application, showed a possibility for reducing inspection cost considerably and for attaining savings in journal-box packing and in the labor of application. Since the original design, several changes have been made to improve the performance of the retainer, and the present model was adopted in June 1950.

Additional experience with Flex-Pak has been gained on the Pennsylvania. Twenty-five B60B head-end cars so equipped have gone through the second brass change with no hot boxes due to the Hulson container.

In stationary laboratory tests the Pak and box were chilled down to 50 degrees below zero, and there was no displacement of the Pak or the waste on the breakaway. At sub-zero temperatures the container loses pliability, becoming stiff and hard but not brittle. It tends to freeze to the box. The lips stiffen to help hold the waste in place.

Application of the Hulson retainer is simple. It can be applied to standard A.A.R. boxes without removal of the brass. It fits underneath the waste-retainer ribs in all sizes of standard boxes, and in the same position in boxes without ribs. The Flex-Pak need be removed only at established repacking periods, at which time it should be thoroughly cleaned along with the box.

Some of the principal advantages claimed for the Hulson container in addition to its role in reducing hot boxes are: Only about half as much waste is required to pack the journal box when the container is used, and the packing does not have to be set up after the car is humped. Impacts from all causes—low rail joints, rough coupling, surges in the train, etc.—are absorbed by the container which returns the waste to the proper position immediately. A trough along the bottom helps to improve the resiliency. Waste is prevented from rolling out under the collar by cone-shaped lugs in the bottom of the retainer. If packing is pushed out under the collar in service this indicates too much packing.

Slots included in the bottom allow a certain amount of packing to be forced through the retainer when the waste is applied. This packing then acts as a wick to draw free oil from under the container. By adding free oil as required both the journal brass and the combs of the container will be well lubricated, keeping wear of both to a minimum.

PROFITS BEYOND THE DOLLAR

"The thought is relatively new, but industry is fast learning that a 'profit' should not be measured solely in dollars and cents. All business, of course, is established to make a profit, but this profit must never be made at the expense of social loss to someone else. Business profit must be part and parcel of social and community profit, and must be measured at least partly in human well being. In time to come, I believe, industry will prosper only in proportion to its contribution to community well being."—*R. J. Morfa, chairman of the board, Missouri-Kansas-Texas, before the Rotary Club of McAlester, Okla.*

The New Orleans Public Belt was official host for the city to the visiting short line delegates

A Railway Age Convention Report

Short Lines Prepare For a Great Challenge

"The job ahead may be the biggest ever" they learn at New Orleans meeting

Stepped-up production must have stepped-up transportation. Our military production is not yet off the planning boards, but in the first quarters of 1952 goods will begin to flow in impressive quantities. To meet the challenge of this vast new traffic, America's railroads—including its short lines—must study the load to be carried in the light of present equipment and order whatever is needed, now.

With this message Defense Transport Administrator James K. Knudson keynoted the 38th annual meeting of the American Short Line Railroad Association, held in New Orleans, La., October 3 and 4. The meeting attracted the largest representation from the association's membership since 1933. Of the 314 member lines (which cover the railroad alphabet from Aberdeen & Rockfish to Yreka Western), 129 were represented at the meeting by a total of 177 delegates. In addition to Mr. Knudson, the delegates heard talks by Lewis Pilcher, executive vice-chairman, Freight Claim Division of the Association of American Railroads; Leverett Edwards, chairman of the National Mediation Board; deLesseps S. Morrison, mayor of New Orleans and president of the New Orleans Public Belt Railroad; Frank C. Squire, member of the Railroad Retirement Board; E. H. Davidson, director of the Bureau of Locomotive Inspection, Interstate Commerce Commission; F. M. Wilson, assistant to the chairman, Association of Western Railways; and Clayton Rand, editor and columnist of Gulfport, Miss. The New Orleans Public Belt was official host for the city during the two-day meeting.

"In 1908, with the beginning of operations of the Public Belt Railroad, our city learned that a short line could be an indispensable factor in economic development. We know that service —not size—is the measure of public worth. Cognizant of the highly useful functions performed in their own territories by member lines, we express our cordial greeting and sincere tribute." This message from Mayor Morrison was the "contract" on a clever souvenir "ticket" prepared by the Public Belt for "passage" to a number of the social events arranged in connection with the meeting. The "ticket" was designated as "A.S.L.R.R. form 10-2-51" and each coupon was properly validated in the orthodox manner.

In his talk before the association at the luncheon session on October 3, Mayor Morrison explained the evolution taking place in railroad passenger facilities in New Orleans. With the advent of the new union station, five terminals, scattered throughout the business district, will become one and 144 grade crossings will be reduced to 24, all of which will be separated by under- or overpasses, he explained. The total cost of the project—which he said will make the city the first of its rank in the nation with rail and road traffic entirely separated—is in the neighborhood of $50 million. To mark the meeting he officially declared October 3 as "Short Line Day" and he named the association's president, J. M. Hood, honorary "mayor of the day."

Mediation Board Chairman Edwards told the short line officers that the railroad industry should be congratulated for the manner in which it has handled its labor disputes. "The public seldom hears of the disputes that are settled and few probably realize that 22 out of

EXECUTIVE OFFICERS of the association. (Left to right) C. E. Huntley, secretary-treasurer; J. M. Hood, president, and C. A. Miller, vice-president and general counsel. With the association's meeting in the Roosevelt Hotel in New Orleans, President Hood returned to the scene of the first annual meeting over which he presided sixteen years ago

24 major cases have been consummated in an agreement." Mr. Edwards payed tribute to President Hood, terming him "a great influence for the entire railroad industry in Washington" and "the Bernard Baruch of the railroads."

"A Bill Nobody Can Afford"

The background of the 20 careful switching meetings that have been held throughout western territory during the past two years was explained to the delegates by F. M. Wilson of the Association of Western Railways. "A freight claim bill," he said, "is a bill that nobody can afford regardless of how small it may be, because it signifies a shipper dissatisfied." He told of the recent careful switching meeting held in Dallas, at which the chairman of the Southwest Shippers Advisory Board was invited to talk before the assembled operating officers, yardmasters, and switchmen with "no holds barred" on criticizing railroad service. The result of this technique he said, was tending to re-awaken the "job pride" of the men who actually perform the switching. Mere dollar figures on claim losses are meaningless to these men, he said, but their interest was kindled when the figure was described as "a 1/3 reduction in the funds available for property improvements."

Fraud and Abuse of Claims

The vigilance of the Railroad Retirement Board against premeditated fraud and abuse of claims was described by member Frank C. Squire. He also said that the board's present excess of tax receipts over disbursements was entirely justified in view of the expected growth of annuity rolls for the next 20 years. "They will become from 2½ to 3 times their present size," he said. Mr. Squire felt that there would be no increase in the present retirement tax rate in the immediate future at least, but that annuities would undoubtedly have to be increased in view of the recently added benefits of social security.

Director E. H. Davidson of the I.C.C.'s Locomotive Inspection Bureau outlined the bases for the bureau's standards. One of the greatest single causes of accidents, he said, is the postponement of minor repairs for "just one more trip." He observed that there was no important individual cause within this category but that, cumulatively, postponed repairs and poor housekeeping are major accident-causing factors. He urged the short lines' mechanical officers to indulge in "preventive maintenance" to reduce accidents and to watch diesel motive power maintenance closely because the casualties charged against this type of motive power are mounting.

"Needed—More Coordination"

"There is a great need for greater coordination of freight claim prevention work between the trunk lines and the short lines," said Lewis Pilcher of the A.A.R.'s Freight Claim Division. He suggested that individual short lines which do not now have an officer serving full or part time in freight claim work should give thorough consideration to creating such a position. He further suggested that the roads should seek closer contact with the regional shipper advisory boards in their prevention work. Short lines, he said, can help a great deal in preventing damage from poor loading in stop-off cars which are handled to the first consignee on their lines. Mr. Pilcher also urged more frequent and extensive checking of carload freight for damage. The cause of damage cannot be tracked down, he pointed out, unless exception reports are worded with something much more explicit than "damaged en route" or "received in bad order."

Mr. Pilcher suggested that, since packaged freight is such an important source of claims, the roads should consider the use of bulkheads and explore means to reach interline agreements for their return when the car is emptied. He said that rough handling clearly is driving traffic to the trucks and that the nation's terminal and switching roads—especially those with large yards—have a special obligation to control this form of damage through educational methods and close supervision.

"Yeoman Service"

A tribute was paid to the short lines by Mr. Knudson when he said: "The many independent railroads in our country that go about their work day after day, standing on their own feet, help vindicate one's faith in our free-enterprise democracy. They rendered yeoman service in World War II and they are again being called upon to demonstrate their capability in the present emergency." Touching in some detail on the physical characteristics of the railroads of Russia and the extensive modernization and expansion program which

REGIONAL VICE-PRESIDENTS elected for the coming year by the members of the five geographic subdivisions of the association: (Left to right) V. M. Bushman, president, Ahnapee & Western, Green Bay, Wis.; L. C. Bruce, vice-president, Kentucky & Tennessee, Stearns, Ky.; T. H. Steffens, president, Sand Springs, Sand Springs, Okla.; D. W. Thomas, president, Chesapeake Western, Harrisonburg, Va.; and J. M. Bamberger, president, Bamberger Railroad, Salt Lake City, Utah. Collectively, the association's member lines represent 19,808 miles of railroad and an investment of more than $1.6 billion

they have undergone, Mr. Knudson added that short lines are unknown in Russia because the entire system is operated as a single unit under the government's thumb. He said he wanted the short-line people to know that his administration never wants to be in the front row of railroad management.

Mr. Knudson explained that if peace came tomorrow, it probably would take the nation two years to decelerate fully from its present pace. On the other hand, the nation faced the possibility of another ten years of a "maximum production" economy. At present freight car utility is about on a par with 1941 and 1942, despite the spread of the five-day week. But increased utility of freight cars must fill the gap in new car production that has been caused by the shortage of steel. Mr. Knudson reminded the short lines that they are in a position to be of considerable help in the steel scrap drive—and hence in the production of more freight cars—because they are in a position to contact the smaller communities and lure much additional scrap out of hiding. The result, he said, would not only be more steel, but an added source of traffic for those roads that inspired the scrap collection.

Mr. Knudson urged the short lines to consider their present motive power and rolling stock in the light of greatly increased burdens of military traffic soon to come. He said that his administration had secured materials allocations for the industry but that it was now up to the railroads to place orders for equipment in support of these allocations. He pointed out that the short lines are handling a much greater tonnage today with but a fraction of the freight car ownership they had in 1940. "Everybody's using his big brother's equipment now," he said, "but this won't work when military production begins to flow early next year." There is a need, he said, for still more diesel motive power. The need for scrap is so great that the standards for steam locomotives (to scrap or not to scrap) will be revised upwards very shortly, he explained.

Ex Parte 175

During the meeting, word was received of the meeting in Chicago of the traffic executives of Eastern, Western and Southern territory Class I roads to agree on a petition to the I.C.C. to reopen the hearings on Ex Parte 175 with a request for granting of the full 15 per cent increase in freight rates as originally sought

Defense Transport Administrator James K. Knudson. From him delegates heard a tribute, and a challenge, to America's short line railroads

(*Railway Age*, October 8, page 32). The short line delegates, after some discussion of the possibility of further loss of traffic to trucks if such an increase went into effect, voted to give authority to the trunk line officers to include the names of all short lines that appeared in the original or supplemental petitions in the new petition. They also expressed approval of the proposal to alter the basis for designation as Class I, Class II and Class III carriers from the present figures used by the I.C.C. to the proposed minimums of $10 million, $5 million and $1 million yearly operating revenues, respectively. Most of the delegates felt that the devaluation of the dollar had "upgraded" many smaller lines into classifications requiring accounting to the commission out of line with actual needs. In another resolution, the association went on record as opposed to Senate Bill 1725 and House of Representatives Bill 3097 which propose limiting the appearance before governmental agencies entirely to licensed attorneys. The delegates felt it was essential that corporate officers and the so-called "Class B" practitioners be allowed to carry on their work before the commission as presently regulated.

A Railway Age Convention Report

Radio and Printing Telegraph

Discussed by Railroad Communications Officers

Continuing progress in railway communications facilities was the keynote of the 28th annual meeting of the Communications Section of the Association of American Railroads at the Chateau Frontenac in Quebec, October 2, 3, and 4. J. R. Smith, assistant to vice-president communications of the Southern, presided as chairman at this convention, which was attended by 397 men representing railroads and communications manufacturers—the largest registration in the history of the section.

The convention opened with an address of welcome by Armand Vian, industrial commissioner of the city of Quebec, and a talk by N. R. Crump, vice-president of the Canadian Pacific. In his annual address, Chairman Smith explained the application of several modern forms of communication as a means of expediting the operations of freight yards and in reducing delay to trains on the road. He said: "As we study various phases of communications work, we should consider them as opportunities. It is not enough that we evaluate them as technical developments. We must be prepared to recommend them when we believe they will be useful on our railroads. As part of management, we are concerned with efficient operation of our railroads, and it is our job to know what other departments need in communications. We are now a department that must initiate. Each of us can profitably re-examine operations of the railroads we represent, from the communications standpoint, with a view to further increasing efficiency, speeding up traffic, and conserving essential man power."

Reports by eight standing committees and four subcommittees dealt with specifications and service records on 66 subjects concerning the design, construction and maintenance of communications facilities. There were eight short talks by railroad communications men dealing with unusual installations of radio, telephone, carrier, and recording devices for telephone train dispatching. Representatives of manufacturers presented illustrated papers on carrier systems, and on public passenger radiotelephone service. In conjunction with the convention 26 manufacturers and members of the Railway Telegraph & Telephone Appliance Association displayed new apparatus and equipment in the railway communications field.

Radio Increases

The report of the committee on Radio and Allied Communications included a list of the radio and inductive communication installations on railroads. A complete list, including names of railroads, locations of stations, call letters and frequencies used, is kept up to date by L. E. Kearney, communications engineer for the Communications Section, A.A.R. This list was the source of the accompanying comparative table.

Comparison of Radio Stations Authorized and Number of Inductive Carrier Installations on Railroads—May, 1949, May, 1950, and July, 1951

	RADIO			INDUCTIVE CARRIER		
Type Station	May 1949	May 1950	July 1951	May 1949	May 1950	July 1951
Train—Base	74	147	227	146	182	221
Train—Mobile	868	1,921	4,283	833	915	1,168
Yard—Terminal—Base	141	168	224	22	18	20
Yard—Terminal—Mobile	1,466	1,928	2,703	63	58	56
	2,549	4,164	7,437	1,064	1,173	1,465

As shown in the table, the number of train-mobile radio stations increased in a 14-month period from 1,921 to 4,283, about 117 per cent. The total number of base and mobile radio stations in train and yard service increased 78 per cent in the same period—from 4,164 to 7,437. In inductive carrier installations an increase of about 27 per cent, 915 to 1,168, is shown in train-mobile stations. The total number of inductive carrier base and mobile stations in train and yard service increased 24 per cent from 1,173 to 1,456. The total number of radio and inductive carrier installations from May 1950 to July 1951 increased from 5,337 to 8,893, about 66 per cent.

The report of the committee on Outside Plant reviewed modern methods of treating poles in service, to prevent decay at or near the ground line. The "Cobra" treatment, which the supplier claims will extend the pole life for 15 to 20 years, consists of injection of an antiseptic paste containing sodium fluoride, dinitrophenol and arsenious anhydride through use of a manually operated tool designed for the purpose. In the "Osmose" method for treating poles, the preservatives used are sodium fluoride, dinitrophenol and potassium bichromate, all contained in a plastic compound which is applied to the cleaned pole surface from 17 inches below to 3 inches above the ground line, after decayed wood has been removed.

Talks by Communications Men

Mechanized construction methods of the Canadian National were outlined by J. E. O'Brien, outside engineer of the company. Because of the increased cost of labor in the past ten years and the present labor situation, the Canadian National has been mechanizing its construction forces. In April 1951 the road purchased one "Tractair," a tractor-driven air compressor with standard and auxiliary equipment consisting of a winch, cable, pneumatic tool hose, and jackhammers. The unit cost $7,192. At this time two line construction trucks with combination pole and cable reel trailers also were

acquired. These units cost $10,247 each with associated equipment. Results after five months use indicate that a gang of seven to nine men, with these vehicles, can now do the work formerly done by a 16-man gang. The savings in labor and truck costs in five months have been estimated to be $6,600.

T. E. Binyon, telegraph and telephone engineer of the Pennsylvania, discussed the use of portable wire recording and film recording units in observing telephone train dispatching communications between block operators and train operating employees. The wire recorder, using spools of wire, weighs 26 lb., has a maximum of continuous recording of one hour, and can be reused. The film recorder, using rolls of films on drums, weighs 50 lb., has a maximum of continuous recording of six hours, and is a permanent record and cannot be reused. Experiments have been made at three block stations on secondary lines where instructions are handled by telephone. The recordings are intended to ascertain that instructions are handled in accordance with rules, proper identification of parties is made, proper language is used between parties, and the condition of the telephone lines and equipment is satisfactory. The results have been satisfactory on recordings of voice for long or short lines including various voices.

Bridging a Water Gap

R. B. Steele, chief engineer, Canadian National Telegraphs, described the radio link bridging a water gap of 72 miles between Newfoundland and Nova Scotia. The normal wire line terminations of the communication companies operating in Nova Scotia are in Sydney. The problem was to make contact with new wire line facilities being constructed on the southwestern tip of Newfoundland. This radio link was built as a defense measure in 1943-4. Since extreme emphasis was placed on reliability, radio sites were selected which would provide optical paths. The Nova Scotia sites chosen were one at New Waterford, on the coast 14 miles north of Sydney, and another at Cape North on a headland overlooking the sea in both directions of transmission. The Newfoundland terminal was located on Table Mountain. During defense operation no propagation difficulties were experienced. After the war, the government decided to keep this radio bridge in operation. It now handles one voice channel, a program channel for network broadcasting and 15 channels of carrier telegraph for general telegraphic communications purposes.

L. R. Thomas, electronics engineer of the Santa Fe, described humping operations controlled by radio at the new Pueblo (Colo.) yard. Efficiency of humping operations was increased and yard delays were reduced by the use of radio communications. The yard is fully equipped with talk-back speakers, intercommunication facilities, paging speakers, telephone, radio for general yard and terminal operation, radio for hump operation, and "packset" radio for car checking. There is also a signal installed at the crest of the hump which can be used to control humping operations in case the radio fails.

Simultaneous operation of the radio and a talk-back speaker allows the yard conductor at the hump to converse with the "pin puller" at the crest of the hump, the engineman, the retarder tower, and the general yardmaster. As a result, all these persons can hear the conductor's instructions concerning humping operations. Diesel-electric switchers are equipped with two-channel radio equipment using channel "A" for operating in general yard service under instructions of the general yardmaster, and channel "B" for humping cars under the direction of the yard conductor at the hump. Mr. Thomas expressed the opinion that "so far as Pueblo Yard is concerned, a communication system between the yard conductor and engineman, which permits full two-way discussion between them, is of far more value than any system which allows only one-way instructions and that limited to three or four signal indications."

Reading clockwise, J. R. Smith, chairman; A. H. Grothmann, secretary; C. O. Ellis, vice-chairman, Communications Section, A.A.R.

George M. Brown, electronics engineer of the New York Central, explained how much time is saved in lining up and maintenance of wire line carrier equipment by means of an experimental crystal frequency standard which checks carrier oscillator frequencies and helps to synchronize these oscillators in various terminals. For use on multi-channel carrier, a second experimental crystal frequency standard has been constructed.

R. M. Laurenson, communications engineer of the St. Louis-San Francisco, described how that road uses telephones in l.c.l. freight transfer houses. Phone installations at three freighthouses each save approximately $1,000 a month. These installations utilize portable telephones, telephone jacks strategically located throughout the freighthouse, and a centrally located office where clerks use phones for constant contact with the freight handling crews. These installations also have paging systems with microphones on the foremen's desk, and loudspeakers throughout the freighthouse, so that personnel on the freight platforms can be called to a phone or to the office. At Memphis, clerks working with the crews at the freight cars previously were idle about two-thirds of the time, because less time was required to do the paper work than for the crew to handle the freight. An automatic dial telephone system was installed with six

clerks' phones and 35 phone jacks throughout the freighthouse. Crews were supplied with portable dial phones, which could be plugged into a phone jack, and had extension cords so the phones could be carried into freight cars. The clerks were moved to a central office where they were kept busy all the time and could maintain contact with several crews at a time.

Further study of freighthouse telephone systems resulted in the adoption of a two-wire, common-battery system in the l.c.l. houses at Springfield, Mo., and St. Louis. Each clerk has switches for each telephone line so he can talk to any one or several crews. He can use the general paging system to talk to anyone on the freight platforms. The equipment also allows the freight agent or the foreman to monitor the calls of the clerks.

At Springfield, there are separate inbound and outbound freight handling operations, utilizing six clerks and 34 handsets. The St. Louis system, while not complete, is in operation with separate inbound and outbound freight operations employing 12 clerks and 56 portable phones. The Memphis project, with automatic dial, cost approximately $9,000, with a saving to the Frisco of better than $1,000 a month. A comparable saving is realized with the Springfield manual operations which cost $4,000. The St. Louis installation also will have pneumatic tubes to expedite the delivery of waybills. This installation is not yet complete, but it is expected to cost $20,000 with savings to the railroad of about $3,000 a month.

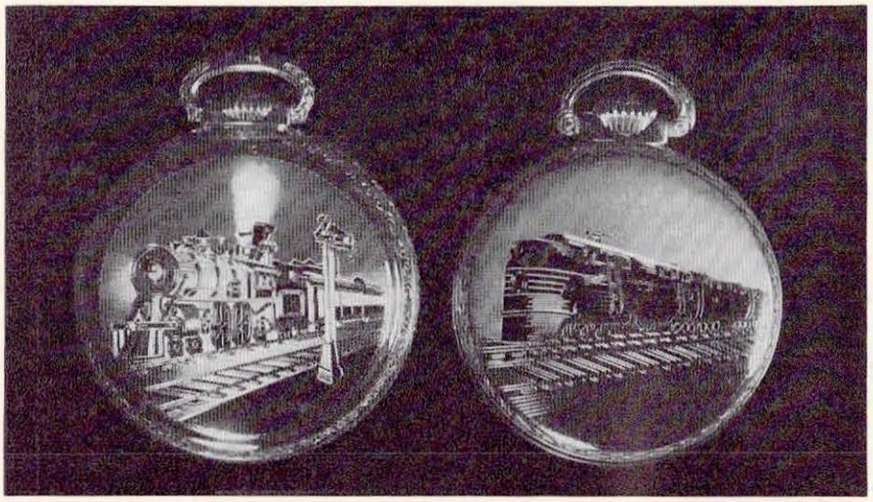
A 12-volt power supply for radio on a caboose, which is being installed for approximately $700, was explained by L. E. Verbarg, electronics engineer of the Missouri Pacific. The system includes two series-connected 6-volt lead-type storage batteries rated at 240 a.h. A 14-volt, 75-amp. Leece-Neville alternator is axle-driven by Dayton belts. This alternator feeds through a rectifier to charge the storage battery. The alternator, rectifier and regulator are mounted above the floor level in the caboose. The battery charge begins at a speed of 12 m.p.h. and will be at full charging rate at 20 m.p.h. The radio equipment on the 60 cabooses was made by Motorola. This radio apparatus and 12-volt power supply has now been successfully operated on these 60 cabooses for 15 months. Advantages of the 12-volt system, Mr. Verbarg stated, are reduced first cost and less maintenance expense.

The operation of the multiple Teletype transmitter at the central telegraph office of the Baltimore & Ohio was described by E. F. Barnhart, assistant communications engineer of the railroad. Prior to this installation copies of a message sent to different addresses had to be transmitted separately. Now it is possible to send a message simultaneously to as many as 16 different addresses, with only one run of the message tape through the new multiple transmitter. Since its construction, the multiple Teletype transmitter has greatly increased the speed with which central telegraph office messages, such as wheel reports, can be distributed. It has decreased handling time and unnecessary duplication of effort. The sending of multiple messages has now become a simple and efficient operation.

Newton Monk, of Bell Telephone Laboratories, reported on radiotelephone service as used on passenger trains. In 1929, a telephone train service using the inductive system was inaugurated by the Canadian National and used for a short period. Following World War II the telephone companies introduced mobile radio service including radio sending and receiving stations at numerous points, especially in the eastern part of the United States and on the West Coast. Using some of these land stations, the Baltimore & Ohio and the Pennsylvania, in 1947, introduced radio on some passenger trains operating between New York and Washington, by which passengers could make or receive telephone calls in connection with other phones in the Bell system.

This radio telephone system was installed also by the New Haven on two trains between New York and Boston, on the "Twentieth Century" on the New York Central between New York and Buffalo, on the Southern Pacific "Lark" between San Francisco and Los Angeles, and on the Pennsylvania's "Broadway" between New York and Pittsburgh. The first of these installations used special attendants on the trains whose salaries and expenses were a major portion of the cost to the railroads. In order to dispense with the attendants, in 1950 coin box telephones were installed on one of the Pennsylvania trains and one of the New Haven trains.

To derive added use of a pair of wires, either open or in cable, railroad communications departments have utilized carrier telephone and telegraph equipment. To increase the utility of some carrier systems, it is necessary to operate them above 30 kc. Characteristics and applications of such systems were discussed by D. Gordon Clifford, sales engineer of the Lenkurt Electric Company.



ENGRAVED WATCH CASE BACKS REFLECT CHANGING TIMES.—For over 50 years the Keystone Watch Case division of the Riverside Metal Company has supplied "Railroader" style watch cases with steam locomotive designs on the back. But so many calls came in for a more modern design that the diesel engraving at the right has been worked out. To please as many railroad customers as possible, the diesel design, like the older steam type, is a composite of many current locomotives

GENERAL NEWS

Tariff Study Group Seeks Help

Chairman Charles S. Baxter of the Railroads' Tariff Research Group has invited the National Association of Railroad and Utilities Commissioners and the individual state commissions to participate in the group's research program. In a recent letter to the association's president — Commissioner G. H. Flagg of Oregon — Mr. Baxter suggested that the association appoint a committee to work with the railroad group on those phases of the research program in which state regulatory bodies have an interest.

Freight Car Loadings

Loadings of revenue freight in the week ended October 6 totaled 858,750 cars, the Association of American Railroads announced on October 11. This was a decrease of 5,823 cars, or 0.7 per cent, compared with the previous week; a decrease of 5,153 cars, or 0.6 per cent, compared with the corresponding week last year; and an increase of 284,522 cars, or 49.5 per cent, compared with the equivalent 1949 week, when a coal strike was in progress.

Loadings of revenue freight for the week ended September 29 totaled 864,573 cars; the summary for that week, as compiled by the Car Service Division, A.A.R., follows:

REVENUE FREIGHT CAR LOADINGS

For the week ended Saturday, September 29

District	1951	1950	1949
Eastern	143,814	151,709	119,920
Allegheny ...	175,593	176,590	115,696
Pocahontas ..	67,734	68,243	20,289
Southern	131,414	135,432	103,769
Northwestern	143,090	146,390	128,959
Central Western ...	137,391	136,044	120,163
Southwestern .	65,537	65,778	49,332
Total Western Districts ...	346,018	348,212	298,454
Total All Roads ..	864,573	880,186	658,128
Commodities:			
Grain and grain products ...	51,330	51,297	54,854
Livestock	17,174	15,594	15,191
Coal	160,218	165,905	33,522
Coke	15,985	15,530	9,246
Forest products ...	45,593	50,056	40,724
Ore	82,200	79,398	51,660
Merchandise l.c.l.	76,949	90,121	88,107
Miscellaneous	415,124	412,285	364,824
September 29	864,573	880,186	658,128
September 22	864,310	870,529	661,468
September 15	850,812	866,658	743,022
September 8 .	732,908	751,449	623,962
September 1 .	829,391	851,841	703,934
Cumulative total 39 weeks ..	30,342,248	28,498,859	27,812,978

In Canada.—Carloadings for the weeks ended September 22 and September 29 totaled 88,466 and 87,361 cars, respectively, compared with 86,986 cars for the week ended September 15, and 90,261 cars, and 90,859 cars, respectively, for the weeks ended September 23 and September 30, 1950, according to the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada:		
September 29, 1951 ..	87,361	35,314
September 30, 1950 ..	90,859	36,131
September 22, 1951 ..	88,466	34,028
September 23, 1950 ..	90,261	35,419
Cumulative Totals for Canada:		
September 29, 1951 ..	3,112,404	1,349,405
September 30, 1950 ..	2,836,343	1,201,513

D.T.A. Outlines Procedures For Building Applications

Administrative Order DTA 1, issued by Defense Transport Administrator James K. Knudson, has established procedures and criteria by which D.T.A. exercises the authority delegated to it by the National Production Authority to process applications required under NPA Order M-4A and CMP Regulation 6 for construction projects in the domestic transport and storage fields. The Knudson order became effective October 1.

D.T.A. action on the applications involved will be taken by the director of its Equipment and Materials Division— "upon consideration of recommendations made by operating divisions." In that connection, however, the order contains provisions for appeals to Administrator Knudson.

I.C.C. Rules for Reports On Employees and Wages

The Accounting Division of the Association of American Railroads has issued a pamphlet embodying "Rules Governing the (I.C.C.) Classification of Railroad Employees and Reports of Their Service and Compensation." It is now available at 50 cents per copy, according to an announcement by Division Secretary E. R. Ford.

"This pamphlet," Mr. Ford said, "comprises an exact reproduction of the orders of the Interstate Commerce Commission, and complementary data, issued in separate mimeographed form by the commission, governing the preparation of railroad employees' service and compensation reports to the commission. The wage reporting data have been correlated and published in one volume for the convenience of railroad employees charged with the duty of compiling wage reports filed with the commission . . ."

Emergency Board Reports On Pullman Case

An emergency board has submitted to President Truman a report recommending that Pullman conductors settle their wage dispute on the basis of a Pullman Company proposal which is on the pattern of recent settlements in railroad cases. The proposed settlement would give the conductors a wage increase of $37 95 per month, which would be retroactive in whole or in part to various dates back to January 1.

The proposal includes escalator-clause provisions under which cost-of-living adjustments would be based on the Consumers' Price Index at 178, and would thus account for $14.70 of the $37.95 monthly raise that would become effective initially. There would also be provisions for a moratorium until October 1, 1953, on further proposals for changes in wages and working rules.

The conductors were represented by the Order of Railway Conductors, and their demand was for a raise of $90 per month. Members of the board were Chairman Carroll, R. Daugherty, George Cheney, and Andrew Jackson.

New Transportation Post In Commerce Department

In reorganizing the Office of the Solicitor in the Department of Commerce, Secretary Sawyer has named Samuel Earnshaw as assistant solicitor for transportation. This is a new position, and, according to a department announcement, is another step in the "realignment of the department's top administrative machinery."

Mr. Earnshaw was formerly with the New York, New Haven & Hartford, but left that road in 1945 to join the American Trucking Associations. He resigned at the end of 1948 to enter private law practice in Washington, D. C., and New York, and continued in that capacity until joining the Commerce Department in mid-July of this year.

C. Dickerman Williams is Department of Commerce Solicitor. The Transportation Division, which Mr. Earnshaw heads, is one of three divisions established under Mr. Williams. Others are domestic affairs and international affairs.

A.A.R. Opposes New St. Lawrence Proposal

There is nothing in the newly introduced proposal to construct the St. Lawrence waterway and power project that can meet objections which led the House Committee on Public Works to vote down the original seaway resolution, Gregory S. Prince, assistant general counsel of the Association of American Railroads, said last week. Mr. Prince's statement was among opposition presentations made at the committee's hearings on House Joint Resolution 337, which embodies the "new and materially different" St. Lawrence proposal sponsored by Representative Blatnik, Democrat of Minnesota.

The resolution was introduced after President Truman told Prime Minister St. Laurent of Canada that he would support the building of the seaway by Canada alone—if Congress failed to

approve the proposed joint undertaking. (*Railway Age*, October 8, page 34.) The House committee's vote to pigeonhole the original resolution was taken last July.

Provisions of the new resolution are "about the same," Mr. Prince said. "The committee," he continued, "reached the sound conclusion that the project was not required in the interest of national defense and from that it followed that the expenditure of the money, manpower and materials required for its construction could not be justified."

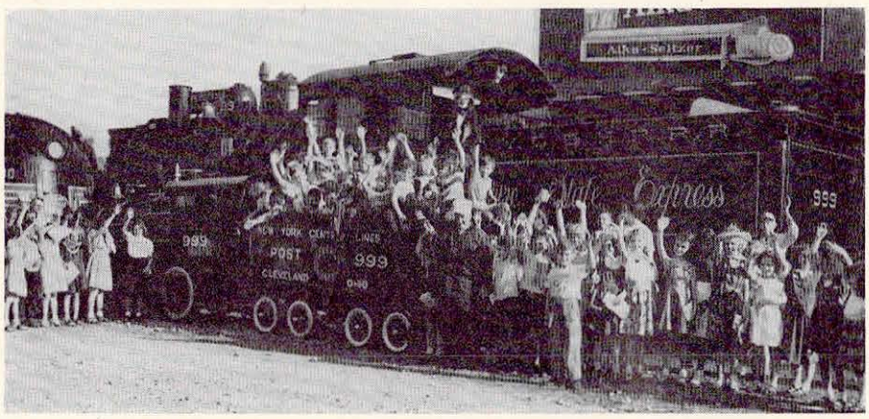
Mr. Prince went on to say that there had been no change in the requirements of the nation's preparedness program or in economic conditions which could justify a different conclusion today. The new bill, he continued, calls for construction of the same physical project at like expenditures of money, manpower and materials.

"Evidence presented at hearings earlier this year," the A.A.R. officer also said, "demonstrated that the St. Lawrence waterway was an uneconomical project that could never be self-liquidating in fact no matter how carefully conceived the theoretical scheme was. The new resolution was designed in part to remove some of the objections to the theoretical plan for self-liquidation, but no words or amendments to the legislative proposal could possibly convert an unsound project into a sound one economically."

ELKHART WENT WILD when the city —not the railroad—celebrated the 100th anniversary of its first rail service on October 4, 5 and 6 with an unprecedented three-day centennial and pageant. The entire celebration was organized and sponsored by local civic groups which did not let the New York Central—Elkhart's only railroad—"in" on their plans until they were well matured.

A jubilant carnival atmosphere pervaded the entire city for three days while local merchants and industries joined in the spirit of the occasion. Employees of the St. Joseph Valley Bank wore railroad and period costumes during business hours for the entire week (above). In a large exhibition adjacent to the railroad station the N. Y. C. displayed its most modern freight and passenger equipment, along with "old 999"—the steam locomotive which pulled the "Empire State Express" on its record breaking speed stint before the turn of the century. "Old 999" is pictured below, on exhibition, with a model, loaned by American Legion post 999 in Collinwood, Ohio, which was driven through the streets of Elkhart.

The final day of the celebration was marked by a parade with floats and an estimated 1,000 participants, and by a historical pageant, "From Trails to Rails in Hoosierland," in Rice Field stadium. This pageant, using the entire playing field as a stage, included seven scenes, and a cast of 750. Tickets for the pageant were sold out days ahead of time. The New York Central operated a special excursion between Elkhart and Sturgis, Mich., over the first rail line to enter Elkhart; although the train was provided with maximum seating capacity, many would-be passengers had to be turned away. Central officers and employees occupied places of honor at all events



R.F.C. Abolishes Railroad Division

The Railroad Division of the Reconstruction Finance Corporation has been abolished, and its functions have been transferred to the Corporation's Office of Loans. This was announced on October 9 by R.F.C. Administrator W. Stuart Symington, who went on to say that the Railroad Division's director, W. W. Sullivan, would retire from government service.

Mr. Sullivan reached the retirement age some time ago, Mr. Symington noted, adding that the division director "has served the R.F.C. well for many years." Mr. Symington also said:

"A former railroad official, he [Mr. Sullivan] has been with the R.F.C. since it was established, and personally supervised nearly a billion dollars in railroad loans. Whereas the R.F.C. at one time had loans outstanding to 53 of the 128 Class I railroads in the country, at the present time only seven such loans are outstanding."

I.C.C. Stays Effort to Pass N.Y. Truck Tax to Shippers

The Interstate Commerce Commission has suspended, from October 8 through May 7, 1952, the operation of tariffs whereby truckers are undertaking to establish new surcharges on traffic moving from, to, between or through points in New York. The proposed surcharges would pass on to shippers the new highway-use tax which New York has imposed on truckers.

In suspending the tariffs, the commission instituted an i..vestigation of the proposed charges, docketing the proceeding as I. & S. No. M-3929. Among those requesting the suspension was the National Industrial Traffic League. (*Railway Age*, September 24, page 62.)

Minchin Resigns as Head Of D.T.A. Rail Division

G. H. Minchin has resigned from the directorship of the Railroad Transport Division, Defense Transport Administration, to assume again his former position as senior vice-president of the Atchison, Topeka & Santa Fe. George N. Good, who has been the division's deputy director, has been appointed acting director.

Mr. Minchin was on leave of absence from the Santa Fe while serving in the D.T.A. position which he assumed last March (*Railway Age*, March 26, page 54). In accepting the

CAR SURPLUSES, SHORTAGES

Average daily freight car surpluses and shortages for the week ended October 6 were announced by the Association of American Railroads on October 11 as follows:

	Surplus	Shortage
Plain Box	88	5,854
Auto Box	90	72
Total Box	178	5,926
Gondola	75	4,661
Hopper	0	6,469
Covered Hopper	0	174
Stock	92	1,707
Flat	26	797
Refrigerator	1,631	0
Other	250	55
Total	2,252	19,789

resignation, D.T.A. Administrator James K. Knudson said to Mr. Minchin: "It seems to me that our railroad activities are functioning exceptionally well. This situation is in large measure due to the understandng of what was required, coupled with your ability to bring it about."

Regional Groups Suggested For Union Shop Negotiations

The National Mediation Board has suggested to the railroads that regional conference committees be formed to negotiate on union-shop demands of unions representing non-operating employees. The suggestion was left with carrier representatives on October 4, as the board ended a series of "concurrent mediation" sessions in Washington, D. C.

These sessions involved separate meetings by board members with carrier representatives and "non-op" leaders. The meetings with the carrier representatives are understood to have served principally to point up again the general railroad opposition to consolidation of the union-shop cases for national or regional handling.

Nevertheless the board made the regional-committee suggestion, and recessed the "concurrent mediation" sessions until October 23 to await the railroads' reaction to the suggestion. "Concurrent mediation" is expected to be resumed if the reaction is adverse.

Sutter Becomes Member Of Tariff Research Group

Harry F. Sutter has been appointed to serve as the third member of the Railroads' Tariff Research Group.

The group, of which Charles S. Baxter is chairman, was established recently to study ways and means of simplifying and otherwise improving railroad tariffs. The other member is George W. Lupton, Jr. (*Railway Age* of September 3, page 37.)

Mr. Sutter's appointment was announced October 10 by Fred Carpi, traffic vice-president of the Pennsylvania and chairman of the railroads' administrative committee which is supervising the research project. Mr. Sutter, who is 54 years old, had been in the service of the P.R.R. since 1917. All of his service was in the road's Tariff Bureau of which he was chief at the time of his appointment to the Research Group. "His long experience in tariff-making will be invaluable to the . . . Group in framing tariff improvements designed to alleviate complexities," Mr. Carpi said.

Truck-Leasing Rules Delayed Until Dec. 1

The Interstate Commerce Commission has further postponed, from November 1 until December 1, the effective date of its order prescribing rules to govern the leasing and interchange of vehicles by common and contract truckers. (*Railway Age* of May 28, page 61.)

Higher Commutation Fares Approved for B.&M.

Increases of 66 2/3 per cent in the Boston & Maine's interstate commutation fares have been approved by the Interstate Commerce Commission. The commission's report was in the No. 30824 proceeding, and it noted that Chairman Splawn and Commissioners Aitchison and Alldredge dissented while Commissioner Knudson did not participate.

The 66 2/3 per cent increases will apply to the B.&M.'s 46-ride and 60-ride monthly commutation tickets. The approved adjustment will also restrict the use of one-day round-trip and 30-day round-trip coach fares so that the minimum fares will be $1.25. Meanwhile, present rules will be modified to make the 46-ride monthly ticket valid on any day without restriction. The commission authorized establishment of the new rates on five-days notice.

ORGANIZATIONS

Fire Protection & Insurance Section Meets Next Week

The 1951 annual meeting of the Fire Protection & Insurance Section of the Association of American Railroads, to be held in the Hotel Statler in Cleveland, October 22 through 24, will feature an address by R. L. Snodgrass, vice-president—finance, of the Baltimore & Ohio. The program follows:

OCTOBER 22
9 a.m.

Registration
Address of welcome, Elmer M. Cain, fire chief, city of Cleveland
Address by R. L. Snodgrass, vice-president—finance, Baltimore & Ohio
Chairman's remarks, C. D. Dawson
Address by John A. Urquhart, loss department, Alexander & Alexander

12:30 p.m.

Luncheon in the Euclid room, with informal remarks by L. J. Molloy, president, Interstate Insurance, Inc.

2 p.m.

Address by Charles K. Hoch, inspector, fire & safety department, Reading
Report of Committee on "Fixed Properties," followed by round table discussion

OCTOBER 23
10 a.m.

Report of Committee on "Insurance," followed by round table discussion
Report of Committee on "Rolling Equipment—Cars," followed by round table discussion

12:30 p.m.

Luncheon in the Euclid room, with informal remarks by T. W. Adams, assistant manager, Railroad Insurance Association

2 p.m.

Report of Committee on "Records and Statistics," followed by round table discussion
Address by J. D. Lodge, secretary, Railroad Insurance Association
Report of Committee on "Material—In Transit, Use and Storage," followed by round table discussion
Report of Sub-committee on "Cotton Fire," followed by round table discussion

OCTOBER 24
10 a.m.

Report of Committee on "Publications"
Report of Committee on "Posters"
Showing of Southern Pacific motion picture covering control of diesel oil fires
Report of Committee on "Rolling Equipment—Locomotives," followed by round table discussion
Adjournment.

The **Second National Standardization Conference,** sponsored by the **American Standards Association** in connection with its 33rd annual meeting, will be held in New York's Waldorf-Astoria Hotel, October 22-24. During a morning session on October 23, G. M. Magee, research engineer of the Association of American Railroads, will address an A.S.A. Company Member Conference on "Railway Research Promotes Standardization." The morning session of October 24 will be featured by a Materials Conservation Forum, headed by a panel consisting of C. W. Bryan, Jr., president of the Pullman-Standard Car Manufacturing Company; Robert W. Wolcott, chairman of the board of the Lukens Steel Company, and a government spokesman to be announced at a later date.

Meetings and Conventions

The following list gives names of secretaries, dates of next or regular meetings and places of meetings.

AIR BRAKE ASSOCIATION.—Lawrence Wilcox, Room 827, 80 E. Jackson Blvd., Chicago 4, Ill.

ALLIED RAILWAY SUPPLY ASSOCIATION.—C. F. Weil, American Brake Shoe Company, 6th floor, 109 N. Wabash Ave., Chicago 2, Ill.

AMERICAN ASSOCIATION OF BAGGAGE TRAFFIC MANAGERS.—1450 Railway Exchange Bldg., 109 N. Mo. Annual meeting, June 3-5, 1952, Colorado Springs, Colo.

AMERICAN ASSOCIATION OF PASSENGER TRAFFIC OFFICERS.—B. D. Branch, C.R.R. of N. J., 143 Liberty St., New York 6, N. Y.

AMERICAN ASSOCIATION OF RAILROAD SUPERINTENDENTS.—Miss Elise La Chance, Room 901, 431 S. Dearborn St., Chicago 5, Ill. Annual meeting, May 27-29, 1952, Hotel Sherman, Chicago, Ill.

AMERICAN ASSOCIATION OF TRAVELING PASSENGER AGENTS.—C. A. Melin, P. O. Box 5025, Cleveland 1, O.

AMERICAN RAILWAY BRIDGE AND BUILDING ASSOCIATION.—Miss Elise La Chance, Room 901, 431 S. Dearborn St., Chicago 5, Ill.

AMERICAN RAILWAY CAR INSTITUTE.—W. C. Tabbert, 19 Rector St., New York 6, N. Y.

AMERICAN RAILWAY DEVELOPMENT ASSOCIATION.—R. O. Robertson, Chesapeake & Ohio, C. & O. Building, Huntington 1, W. Va.

AMERICAN RAILWAY ENGINEERING ASSOCIATION.—Works in cooperation with the Association of American Railroads, Engineering Division—Neal D.

THIS SPECIAL POSTER has been prepared by the National Coal Association as part of its contribution to the iron and steel scrap program spearheaded by the National Production Authority. Printed in two colors, the poster is available in 17-inch by 22-inch and letterhead sizes, for display in offices or on bulletin boards

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Howard, 59 E. Van Buren St., Chicago 5, Ill. Annual meeting, March 11-13, 1952, Palmer House, Chicago, Ill.

AMERICAN RAILWAY MAGAZINE EDITORS' ASSOCIATION.—W. B. Grumley, Nickel Plate Road Magazine, 432 Terminal Tower, Cleveland 1, O. Annual meeting, November 1-3, 1951, Greenbrier Hotel, White Sulphur Springs, West Va.

AMERICAN SHORT LINE RAILROAD ASSOCIATION.—C. E. Huntley, 2000 Massachusetts Ave., N. W., Washington 6, D. C.

AMERICAN SOCIETY FOR TESTING MATERIALS.—R. J. Painter, Asst. Secretary, 1916 Race St., Philadelphia 3, Pa. Spring meeting and Committee Week, March 3-7, 1952, Hotel Statler, Cleveland, O.

Annual meeting, June 23-27, 1952, Hotel Statler, New York. (Includes Exhibit of Testing Apparatus and Related Equipment and biennial Photographic Exhibit.)

AMERICAN SOCIETY OF MECHANICAL ENGINEERS.—C. E. Davies, 29 W. 39th St., New York 18, N. Y. Annual meeting, November 30-December 5, 1951, Hotel Statler, New York.

Railroad Division—E. L. Woodward, *Railway Mechanical and Electrical Engineer*, 79 W. Monroe St., Chicago 3, Ill.

AMERICAN WOOD-PRESERVERS' ASSOCIATION.—W. A. Penrose, 839 Seventeenth St., N. W., Washington 6, D. C. Annual meeting April 22-24, 1952, Hotel New Yorker, New York.

ASSOCIATED TRAFFIC CLUBS OF AMERICA.—R. A. Ellison, Cincinnati Chamber of Commerce, 1203 Federal Reserve Bank Bldg., Cincinnati 2, O.

ASSOCIATION OF AMERICAN RAILROAD DINING CAR OFFICERS.—W. F. Ziervogel, 605 S. Ranken Ave., St. Louis 3, Mo.

ASSOCIATION OF AMERICAN RAILROADS.—George M. Campbell, Transportation Bldg., Washington 6, D. C.

Operations and Maintenance Department.—J. H. Aydelott, Vice-president, Transportation Bldg., Washington 6, D. C.

Operating-Transportation Division.—L. R. Knott, 59 E. Van Buren St., Chicago 5, Ill.

Operating Section.—H. S. Dewhurst, 59 E. Van Buren St., Chicago 5, Ill.

Transportation Section.—H. A. Eaton, 59 E. Van Buren St., Chicago 5, Ill.

Communications Section.—A. H. Grothmann, 59 E. Van Buren St., Chicago 5, Ill.

Fire Protection and Insurance Section.—W. E. Todd, 59 E. Van Buren St., Chicago 5, Ill. Annual meeting, October 22-24, 1951, Hotel Statler, Cleveland, O.

Freight Station Section.—W. E. Todd, 59 E. Van Buren St., Chicago 5, Ill.

Medical and Surgical Section.—H. S. Dewhurst, 59 E. Van Buren St., Chicago 5, Ill. Annual meeting, March 31, 1952, Drake Hotel, Chicago, Ill.

Protective Section.—H. S. Dewhurst, 59 E. Van Buren St., Chicago 5, Ill. Annual meeting, May 6-8, 1952, Hotel Schroeder, Milwaukee, Wis.

Safety Section—H. S. Dewhurst, 59 E. Van Buren St., Chicago 5, Ill. Annual meeting, June 3-5, 1952, Hotel Statler, New York.

Engineering Division.—Neal D. Howard, 59 E. Van Buren St., Chicago 5, Ill.

Construction and Maintenance Section.—Neal D. Howard, 59 E. Van Buren St., Chicago 5, Ill. Annual meeting, March 11-13, 1952, Palmer House, Chicago, Ill.

Electrical Section.—Neal D. Howard, 59 E. Van Buren St., Chicago 5, Ill.

Signal Section.—R. H. C. Balliet, 59 E. Van Buren St., Chicago 5, Ill.

Mechanical Division.—Fred Peronto, 59 E. Van Buren St., Chicago 5, Ill.

Electrical Section.—Fred Peronto, 59 E. Van Buren St., Chicago 5, Ill.

Purchases and Stores Division.—John L. Timanus, Transportation Bldg., Washington 6, D. C. Annual meeting, June 2-4, 1952, Palmer House, Chicago, Ill.

Freight Claim Division.—C. C. Beauprie, 59 E. Van Buren St., Chicago 5, Ill. Annual meeting, June 2-4, 1952, Hotel Statler, New York City.

Motor Transport Division.—George M. Campbell, Transportation Bldg., Washington 6, D. C.

Car Service Division.—Arthur H. Gass, Chairman, Transportation Bldg., Washington 6, D. C.

Finance, Accounting, Taxation and Valuation Department.—E. H. Bunnell, Vice-President, Transportation Bldg., Washington 6, D. C.

Accounting Division.—E. R. Ford, Transportation Bldg., Washington 6, D. C. Annual meeting, June 10-13, 1952, Book-Cadillac Hotel, Detroit, Mich.

Treasury Division.—E. R. Ford, Transportation Bldg., Washington 6, D. C. Annual meeting, October 31-November 2, 1951, Palm Beach Biltmore, Palm Beach, Fla.

Traffic Department.—Walter J. Kelly, Vice-President, Transportation Bldg., Washington 6, D. C.

ASSOCIATION OF INTERSTATE COMMERCE COMMISSION PRACTITIONERS.—Miss Sarah F. McDonough, Executive Secretary, 2218 I.C.C. Building, Washington 25, D. C.

ASSOCIATION OF RAILROAD ADVERTISING MANAGERS.—C. J. Hoy, Pennsylvania, Union Station, Chicago 6, Ill. Annual meeting, January 25-26, 1952, Sheraton Hotel, St. Louis, Mo.

ASSOCIATION OF RAILWAY CLAIM AGENTS.—F. L. Johnson, Gulf, Mobile & Ohio R. R., 104 St. Francis St., Mobile 5, Ala. Annual meeting, June 10-13, 1952, Mount Royal Hotel, Montreal, Quebec.

BRIDGE AND BUILDING SUPPLY MEN'S ASSOCIATION.—L. R. Gurley, Modern Railroads, 201 N. Wells St., Chicago 6, Ill.

CANADIAN RAILWAY CLUB.—C. R. Crook, P.O. Box 162, Montreal 3, Que. Regular meetings, second Monday of each month, except June, July and August, Mount Royal Hotel, Montreal, Que.

CAR DEPARTMENT ASSOCIATION OF ST. LOUIS.—D. W. Kramer, Relay Depot Mail Room, East St. Louis, Ill. Regular meetings, fourth Tuesday of each month, except June, July and August, Hotel DeSoto, St. Louis, Mo.

CAR DEPARTMENT OFFICERS' ASSOCIATION.—F. H. Stremmel, 6536 Oxford Ave., Chicago 31, Ill.

CAR FOREMEN'S ASSOCIATION OF CHICAGO.—J. A. Dingess, 8637 South Euclid Ave., Chicago 17, Ill. Regular meetings, second Monday of each month, except June, July and August, LaSalle Hotel, Chicago, Ill.

CENTRAL RAILWAY CLUB OF BUFFALO.—R. E. Mann, Hotel Statler, McKinley Square, Buffalo 5, N. Y. Regular meetings, second Thursday of each month, except June, July and August, Hotel Statler, Buffalo, N. Y.

EASTERN ASSOCIATION OF CAR SERVICE OFFICERS.—H. C. Rochester, Canadian National, 891 Notre Dame St. West, Montreal 3, Que. Next meeting, November 8-9, 1951, Parker House, Boston, Mass.

EASTERN CAR FOREMAN'S ASSOCIATION. — W. P. Dizard, 30 Church St., New York 7, N. Y. Regular meetings, second Friday of January, February, March, April, May, October and November, 29 W. 39th St., New York, N. Y.

LOCOMOTIVE MAINTENANCE OFFICERS' ASSOCIATION.—C. M. Lipscomb, 1721 Parker St., North Little Rock, Ark.

MAINTENANCE OF WAY CLUB OF CHICAGO.—E. C. Patterson, 400 W. Madison St., Chicago 6, Ill. Regular meetings, fourth Monday of each month, October through April, inclusive, except December, when the third Monday, at Eitel's Restaurant, Field Bldg.

MASTER BOILER MAKERS' ASSOCIATION. — A. F. Stiglmeier, 29 Parkwood St., Albany 3, N. Y.

METROPOLITAN MAINTENANCE OF WAY CLUB. — John S. Vreeland, Simmons-Boardman Publishing Corp., 30 Church St., New York 7, N. Y. Meets in February, April, October, and December. Next meeting, October 25, 1951, Hotel Shelburne, New York City.

MILITARY RAILWAY SERVICE VETERANS.—Carl N. Rydin, 622 Railway Exchange, Chicago 4, Ill.

NATIONAL ASSOCIATION OF RAILROAD AND UTILITIES COMMISSIONERS.—Austin L. Roberts Jr., 7413 New Post Office Bldg., Washington 4, D. C. Annual meeting, October 16-19, 1951, Francis Marion Hotel, Charleston, S. C.

NATIONAL ASSOCIATION OF SHIPPERS' ADVISORY BOARDS.—John N. Lind, National Supply Company, Grant Building, Pittsburgh 30, Pa.

NATIONAL DEFENSE TRANSPORTATION ASSOCIATION.—Miss Lois E. Casavant, 930 F. St., N. W., Washington 4, D. C.

NATIONAL INDUSTRIAL TRAFFIC LEAGUE. — Edward F. Lacey, 909 Kass Bldg., Washington 5, D. C. Annual meeting, November 15-16, Palmer House, Chicago, Ill.

NATIONAL RAILWAY APPLIANCES ASSOCIATION.—R. A. Carr, 310 S. Michigan Ave., Chicago 4. Lewis Thomas, Asst. Secy., 59 E. Van Buren St., Chicago 5, Ill.

NATIONAL SAFETY COUNCIL, RAILROAD SECTION. — R. C. Sabens, New York, Chicago & St. Louis, Terminal Tower, Cleveland 1, O.

NEW ENGLAND RAILROAD CLUB.—William M. McCombs, 35 Lewis Wharf, Boston 10, Mass. Regular meetings, second Tuesday of each month, except June, July, August and September, Hotel Vendome, Boston, Mass.

NEW YORK RAILROAD CLUB.—C. T. Stansfield, 30 Church St., New York 7, N. Y. Regular meetings, third Thursday of each month, except June, July, August, September and December, 29 W. 39th St., New York, N. Y.

NORTHWEST CARMEN'S ASSOCIATION.—G. H. Wells, Northern Pacific Railway, St. Paul 1, Minn. Regular meetings, first Monday of each month, except June, July and August, Midway Club, 1931 University Ave., St. Paul, Minn.

NORTHWESTERN LOCOMOTIVE ASSOCIATION. — R. M. Wigfield, Northern Pacific Ry., Room 1134, G. O. Bldg., St. Paul 1, Minn. Regular meetings, third Monday of each month, except June, July and August, Midway Club, 1931 University Ave., St. Paul, Minn.

PACIFIC RAILWAY CLUB. — S. E. Byler, 121 E. Sixth St., Los Angeles 14, Cal. Regular meetings, second Thursday of each alternate month at Palace Hotel, San Francisco, Cal., and Hotel Biltmore, Los Angeles, Cal.

RAILWAY BUSINESS ASSOCIATION.—P. H. Middleton, First National Bank Bldg., Chicago 3, Ill. Annual meeting, November 16, 1951, Hotel Stevens, Chicago, Ill.

RAILWAY CLUB OF PITTSBURGH.—J. D. Conway, 614 Pittsburgh Life Bldg., Pittsburgh 22, Pa. Regular meetings, fourth Thursday of each month, except June, July, August, September and December, Fort Pitt Hotel, Pittsburgh, Pa.

RAILWAY ELECTRIC SUPPLY MANUFACTURERS' ASSOCIATION.—J. McC. Price, Allen-Bradley Company, 445-447 N. LaSalle St., Chicago 10, Ill.

RAILWAY FUEL AND TRAVELING ENGINEERS' ASSOCIATION.—L. H. Peters, New York Central, Room 1213, 139 W. Van Buren St., Chicago 5, Ill.

RAILWAY SUPPLY MANUFACTURERS' ASSOCIATION. — A. W. Brown, 60 E. 42nd St., New York 17, N. Y.

RAILWAY TELEGRAPH AND TELEPHONE APPLIANCE ASSOCIATION. — C. A. Nelson, Waterbury Battery Company, 30 Church St., New York 7, N. Y. Meets with Communications Section of A.A.R.

RAILWAY TIE ASSOCIATION. — Roy M. Edmonds, 912 Shell Building, St. Louis 3, Mo.

ROADMASTERS AND MAINTENANCE OF WAY ASSOCIATION.—Miss Elise La Chance, Room 901, 431 S. Dearborn St., Chicago 5, Ill.

ST. LOUIS RAILROAD DIESEL CLUB.—F. C. Whitlock, Terminal Railroad Association of St. Louis, 376 Union Station, St. Louis 3, Mo. Regular meetings, second Tuesday of each month, Hotel York, St. Louis, Mo. Dinner, 6:45 P.M., meeting, 8 P.M.

SIGNAL APPLIANCE ASSOCIATION. — G. A. Nelson, Waterbury Battery Company, 30 Church St., New York 7, N. Y. Meets with A.A.R. Signal Section.

SOUTHEASTERN RAILWAY DIESEL CLUB. — H. W. Brewer, Seaboard Air Line, Jacksonville, Fla. Regular meetings, second Tuesday in February, April, June, August, October and December, 9:30 a.m., Mayflower Hotel, Jacksonville, Fla.

SOUTHERN AND SOUTHWESTERN RAILWAY CLUB. — A. T. Miller, 4 Hunter St., S. E., Atlanta, Ga. Regular meetings third Thursday in January, March, May, July, September and November, Ansley Hotel, Atlanta, Ga.

SOUTHERN ASSOCIATION OF CAR SERVICE OFFICERS.—F. I. Umhau, Southern Ry., Atlanta 3, Ga. Next meeting, January 23-24, 1952, New Orleans, La.

TORONTO RAILWAY CLUB.—J. A. North, P.O. Box 8, Terminal "A," Toronto 2, Ont. Regular meetings, fourth Monday of each month, except June, July, and August, Royal York Hotel, Toronto, Ont.

TRACK SUPPLY ASSOCIATION.—Lewis Thomas, Q and C Company, 59 E. Van Buren St., Chicago 5, Ill.

WESTERN RAILWAY CLUB.—E. E. Thulin, Suite 339, Hotel Sherman, Chicago 1, Ill. Meetings scheduled for November 19 and December 15, 1951, Hotel Sherman, Chicago, Ill.

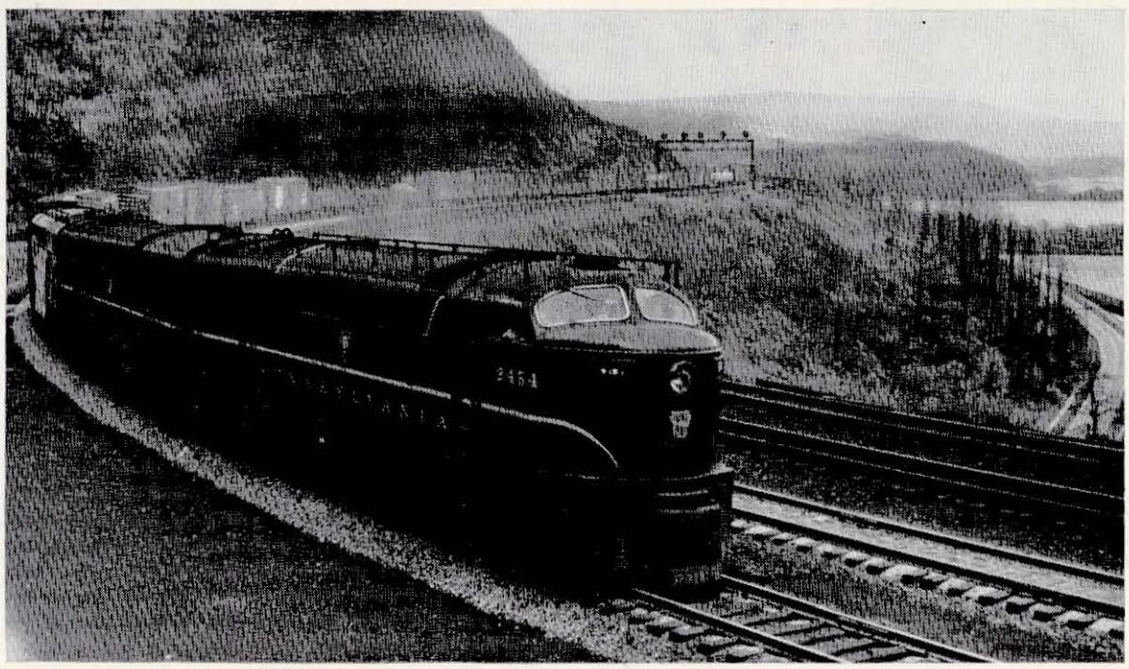
WESTERN ASSOCIATION OF RAILWAY TAX COMMISSIONERS.—A. B. Olson, 210 South Canal St., Chicago, Ill. Regular meetings, first Wednesday of each month, Traffic Club, Palmer House, Chicago, Ill.

SUPPLY TRADE

Walter Kilimnik, salesman in the Los Angeles warehouse of the **United States Steel Supply Company,** has been appointed manager of the alloy division of the company.

William G. Gray, whose appointment as manager of railway sales for the **Pittsburgh Steel Company** was announced in the September 17 *Railway Age*, is a graduate of Pennsylvania State College. Immediately up-

"Big Drag" on Horseshoe Curve!



The Pennsylvania, world's largest railroad, offers one of the most dramatic scenes in railroading -- here at Horseshoe Curve. Up the steep grade ... it seems impossible that man can harness enough horsepower to move extra-long loads of freight -- and crack high-speed Pennsylvania passenger trains.

It's another big-time railroad job where -- any day, every day -- you can see Fairbanks-Morse locomotives at work. When all units ordered have been shipped, Fairbanks-Morse locomotives of all classes, totaling over 281,000 hp., will be serving The Pennsylvania Railroad. Fairbanks, Morse & Co., Chicago 5, Ill.

FAIRBANKS-MORSE, a name worth remembering

on his graduation he joined the Lehigh Valley as a special apprentice, serving at different locations on the system. He was later made foreman, and then general foreman in various L.V. shops, ultimately becoming special engineer at Bethlehem, Pa. He

William G. Gray

subsequently joined the Union Pacific at Omaha as engineer of freight car design; the Association of American Railroads as an assistant mechanical engineer, and the Virginian as master mechanic. He went with Pittsburgh Steel in 1944 as railway development engineer on tubular railway axles, which position he held at the time of his recent appointment.

Arthur I. Gibson, who has been appointed manager of the newly formed sheet and strip division of the general sales department of **United States Steel Supply Company** (*Railway Age*, October 8), has been product representative of that division in Pittsburgh since May 1,

Arthur I. Gibson

1950. Mr. Gibson was first employed by U. S. Steel subsidiaries as a refrigerator tank helper at the Guernsey works (Cambridge, Ohio) of U. S. steel in 1918. He served in various capacities at the company's Guernsey and Vandergrift (Pa.) works until 1933, when he joined the Pittsburgh sales department. Since 1933 he has held various positions in the sales department, and in 1950 was named product representative of the sheet and strip division in Pittsburgh.

S. J. Zuber, formerly freight traffic representative of the **Grand Trunk Western,** in Chicago, has resigned to become president of **Spar Tool Car Distributors, Inc.,** of Chicago. Mr. Zuber also will act as general traffic

S. J. Zuber

manager of the **General Felt Products Company** and **A. Brandwein & Co.** of Chicago, as well as the **Kuehne Manufacturing Company** of Mattoon, Ill. He has been associated with the G. T. W. for 28 years.

The **Baldwin - Lima - Hamilton Corporation** has announced that on or about next January 1 the sales, engineering and manufacturing activities of its wholly owned subsidiary—the **Whitcomb Locomotive Company,** of Rochelle, Ill.—will be transferred to the Eddystone, Pa., plant. The contemplated transfer, the announcement

J. T. Elwood, who has been appointed sales representative for the Vapor Heating Corporation, of Chicago. Succeeding the late Dave J. Jones, Mr. Elwood has been assigned to work with locomotive builders. He came to Vapor in 1941 and has worked with many railroads

R. Robert Zisette, who has been elected a vice-president of SKF Industries, Inc., in charge of sales, advertising and market research. Mr. Zisette has been with the company for 30 years and was general sales manager before his recent appointment

said, "represents a broadening and strengthening of Baldwin-Lima-Hamilton's position in the field by concentrating all locomotive manufacture in the Eddystone plant where ample facilities are available." The present Whitcomb plant at Rochelle will be used to provide space for expansion of the manufacturing activities of the **Austin-Western Company,** also a B.-L.-H. subsidiary.

Sid A. Skidmore, Jr., has been promoted to assistant chief engineer of the **P. & M Co.,** with headquarters in Chicago.

Rudolph J. Lesnik, formerly chief draftsman of the **Gorham Tool Company,** has been appointed chief engineer.

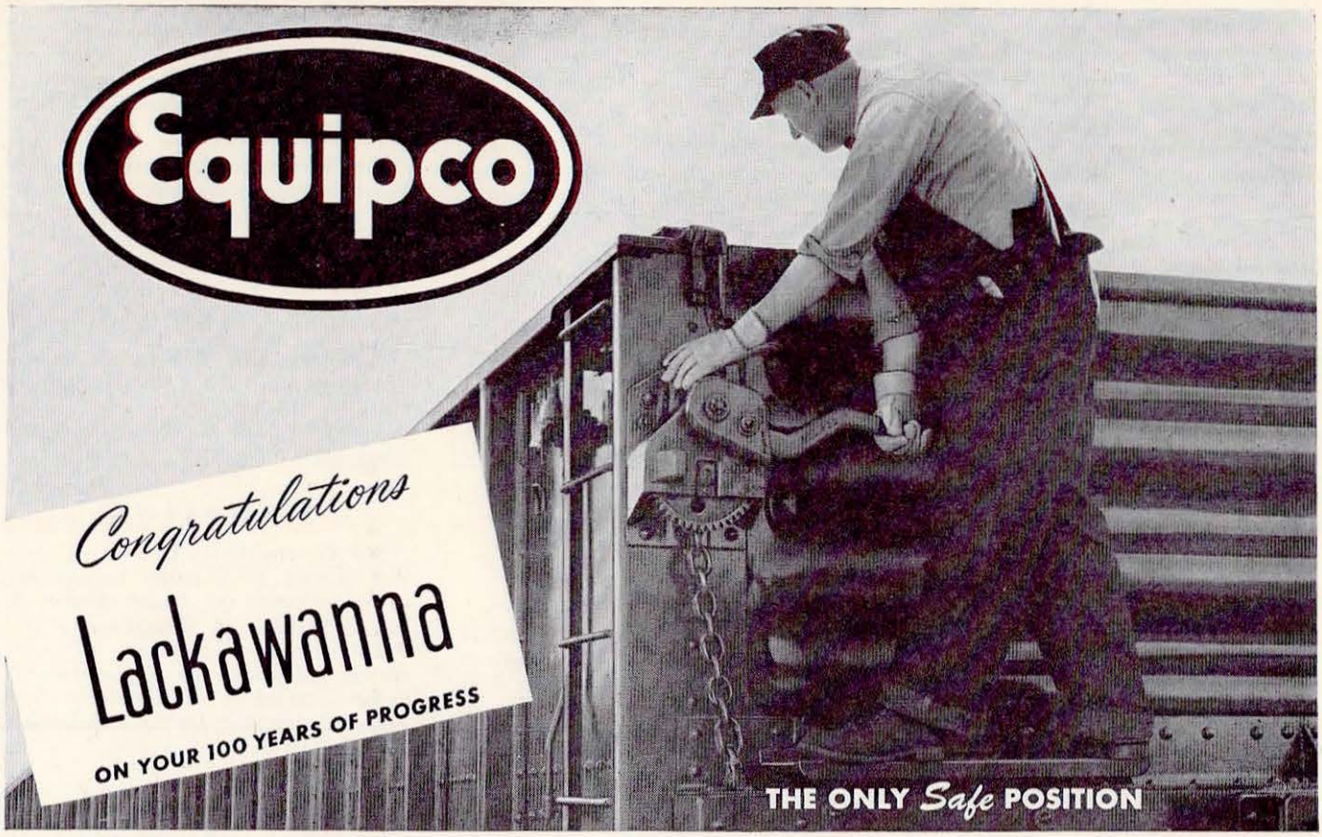
J. T. Carroll has been appointed assistant manager of the Chicago district office of the **Worthington Pump & Machinery Corp.,** to succeed **J. B. Laramy,** who has been appointed manager of the marketing research department.

W. D. Ohle, formerly traffic manager of the **Sinclair Refining Company,** has been appointed general traffic manager.

L. F. A. Mitchell has been appointed division product sales manager of the **General Cable Corporation,** with headquarters in New York.

Raymond S. Perry, has been elected vice-president and a director of the **Federal Telephone & Radio Corp.,** Clifton, N. J. Mr. Perry has been general sales manager of the firm's sales and commercial activities since 1949.

F. A. Sjogren has been appointed manager of the Duluth, Minn., branch of the **Graybar Electric Company,**



A DROP-END GONDOLA REQUIRES A LEVER-TYPE HAND BRAKE

Special safety conditions not common to any other type of freight car are involved in the application of hand brakes to drop-end gondolas. That's why the Equipco Lever-Type Hand Brake was designed especially and exclusively for drop-end gondolas. It permits firm footing for the brakeman. He is not required to hang on to the car side-ladder while operating the hand brake—his body is within the sides of the car at all times. He is never in danger due to "close clearance" conditions. He has a clear view ahead—can safely and accurately "spot" the car in desired position... The Equipco Lever-Type Hand Brake is economical to install. Applied to corner post, no mounting plates are required...A.A.R. Certified.

UNARCO

Equipco Hand Brake Department

UNION ASBESTOS & RUBBER COMPANY

332 South Michigan Avenue • Chicago 4, Illinois

to replace **P. D. Barber,** who has been appointed manager at Portland, Ore., effective November 1. Mr. Barber will succeed **John Reine,** who will be transferred on December 1 to Minneapolis as district manager, succeeding in turn **C. H. McClean,** who is retiring.

George T. Humphrey, Jr., has been appointed assistant general manager of the service sales division of the **Timken Roller Bearing Company,** with headquarters at Canton, Ohio. Mr. Humphrey formerly was assistant branch manager of the service sales division of Dallas.

Norman A. Kiefer has been appointed district traffic manager for the **Bethlehem Steel Company** at Lackawanna, N. Y.

George L. Green, vice-president in charge of sales of the **Spring Packing Corporation,** has been elected executive vice-president, with headquarters in Chicago. Mr. Green began his business career in 1931 with the Continental Illinois National Bank & Trust Co., joining the Union Asbestos & Rubber Co. in 1934. He held various sales positions there until 1944, when he was elected vice-president in charge of sales for the Mt. Vernon Car & Manufacturing Co. He resigned this latter position to become western sales manager for the American Locomotive Company, which position he held until 1948. He then joined the Pullman Standard Car Manufacturing Company at Chicago, as manager of miscellaneous sales. Mr. Green joined Spring Packing in 1949 as vice-president in charge of sales.

George L. Green

OBITUARY

George L. Donnett, 61, manager, signaling sales, for the Graybar Electric Company, died on October 3 at his home in Pelham, N. Y. Mr. Donnett joined Graybar as a quotation clerk in Cleveland in February 1920. He was transferred to New York in January 1932, and worked as sales engineer in the communications department before his appointment as manager, signaling sales, in 1949.

Arthur B. McCoy, St. Louis representative for the steel floor division of the Great Lakes Steel Corporation, died on September 25 in St. Louis.

EQUIPMENT AND SUPPLIES

FREIGHT CARS

8,533 Freight Cars Delivered in September

New freight cars for domestic use delivered in September totaled 8,533, the American Railway Car Institute and the Association of American Railroads have jointly announced. The increase over the 7,183 cars delivered in August reflected settlement of strikes which curtailed production in August and part of September, the announcement said.

Orders for 9,657 freight cars for domestic use were placed in September, the announcement added, bringing the backlog of cars on order and undelivered to 140,135 on October 1. A breakdown of cars ordered and delivered last month, and of cars on order on October 1, is given in the accompanying table.

Type	Ordered Sept. 1951	Delivered Sept. 1951	On Order & Undelivered Oct. 1, 1951
Box—Plain	3,000	2,905	46,945
Box—Auto	——	715	952
Flat	53	104	3,539
Gondola	1,623	2,552	24,665
Hopper	2,500	309	39,843
Covered Hopper	400	427	5,084
Refrigerator	1,000	673	6,547
Stock	——	——	1,000
Tank	1,066	802	10,151
Caboose	15	17	460
Other	——	29	949
TOTAL	9,657	8,533	140,135
Carbuilders	4,479	5,755	94,231
Railroad Shops	5,178	2,778	45,904

The **Great Northern** has ordered 950 50-ton box cars from its own shops at an approximate cost of $6,175,000, and 50 50-ton express refrigerator cars from the Pacific Car & Foundry Co. at an approximate cost of $1,300,000. Delivery is expected during the second quarter of 1952. These cars are a portion of the 2,065 reported authorized for purchase in *Railway Age* May 21, page 182.

The **Grand Trunk Western** has ordered 350 50-ton box cars and 250 70-ton hopper cars from the American Car & Foundry Co.

The **Louisville & Nashville** has ordered 250 50-ton box cars from the Pullman-Standard Car Manufacturing Company.

The **Transportation Corps** has ordered for the Navy 880 munitions cars, equipped with Chrysler trucks, from the Pullman-Standard Car Manufacturing Company.

The **Virginian** has ordered 1,000 50-ton hopper cars from the Bethlehem Steel Company. The inquiry for these cars was reported in *Railway Age* August 27, page 58.

LOCOMOTIVES

The **Atchison, Topeka & Santa Fe** has ordered 10 1,600-hp. and 14 1,200-hp. diesel-electric switchers from Fairbanks, Morse & Co., with delivery scheduled for 1952.

SIGNALING

The Electro-Motive Division of General Motors Corporation has placed an order with the Union Switch & Signal Division of Westinghouse Air Brake Company for 10 sets of intermittent inductive train stop equipment to be installed on diesel-electric locomotives being built for the **Pittsburgh & Lake Erie.**

IRON & STEEL

The **Chesapeake & Ohio** has ordered 26,450 gross tons of rail from the United States Steel Company, 20,925 gross tons from the Inland Steel Company, 6,194 gross tons from the Bethlehem Steel Company, and 1,785 gross tons from the Algoma Steel Corporation.

CONSTRUCTION

Central of Georgia.—This road has applied to the I.C.C. for permission to construct a 2.9-mile line in the vicinity of Lavendar, Ga., to serve proposed new plants of the Georgia Power Company and the Mead Corporation. The road estimates traffic of approximately 19,000 cars a year will result from the new plants. Cost of the proposed line, to be paid out of funds on hand, is estimated at $280,160.

Chesapeake & Ohio.—The following projects (for parts of some of which contracts have been awarded—see below) have been authorized at the indicated probable costs: Diesel servicing facilities on the Northern subdivision and the Hocking division ($1,930,000); C.T.C. and extension of side tracks from Drew, Ind., to Peru ($1,546,000); installation of diesel servicing facilities at Wyoming, Mich. ($616,000), Rougemere ($320,000), New Buffalo ($176,000), Ludington ($141,000), Port Huron ($138,000), Benton Harbor ($63,000), Saginaw ($41,000), and Plymouth ($37,000). *(Continued on page 119)*

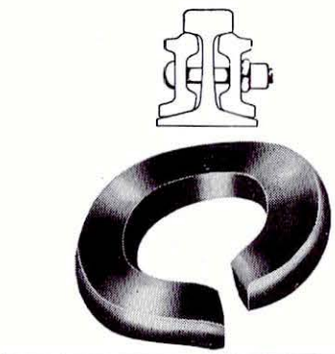
Congratulations to . . .

Lackawanna Railroad

THE ROUTE OF PHOEBE SNOW

• The shortest rail route between New York and the Great Lakes; the road that for over one hundred years has served ever increasingly, and helped develop so many communities and industries in New Jersey, Pennsylvania and New York.

We are proud to have been selected by such a road to supply them with some of our products for many, many years of their century of fine service.



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IMPROVE TRACK

THE NATIONAL LOCK WASHER COMPANY

Newark 5, New Jersey, U.S.A.

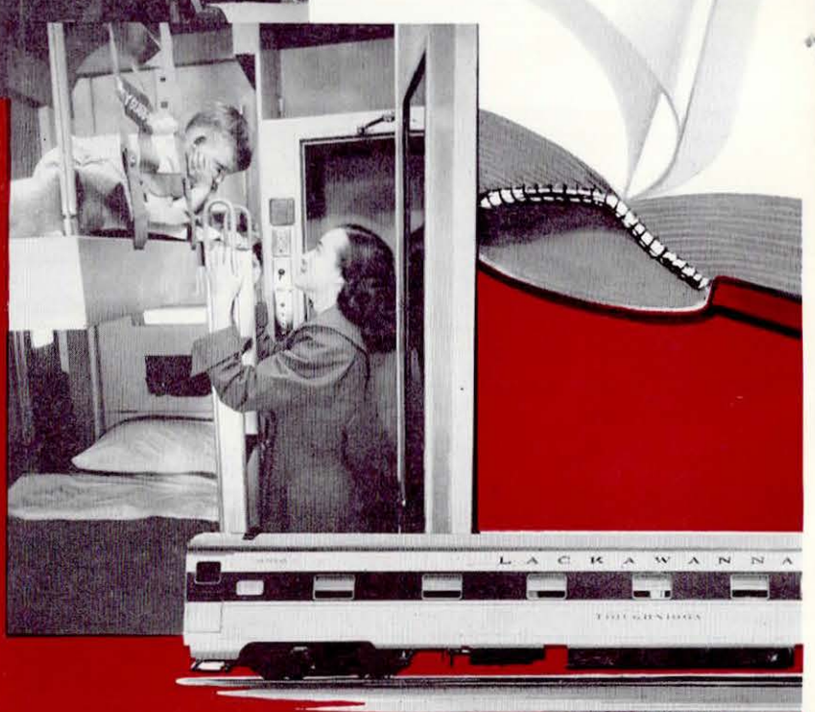
A Complete Line of
Railway Spring Washers

A SALUTE FOR

TO THE NEXT

Lackawanna coach interiors... so modern...so spacious...with 'built-in' travel luxury. Built by A.C.F. for Lackawanna progress.

The Lackawanna passenger cars of today...and tomorrow. A far cry from yesterday's 'pride of the rails.' Built by A.C.F. for Lackawanna progress.



Lackawanna sleepers...so roomy...so convenient...with accommodations for real 'family' comfort. Built by A.C.F. for Lackawanna progress.

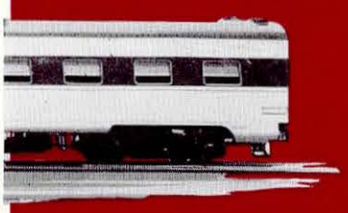
THE Lackawanna

100 YEARS!

For the folks...past and present... who have helped build the Lackawanna to its peak of prominence it must be gratifying indeed to celebrate this centennial.

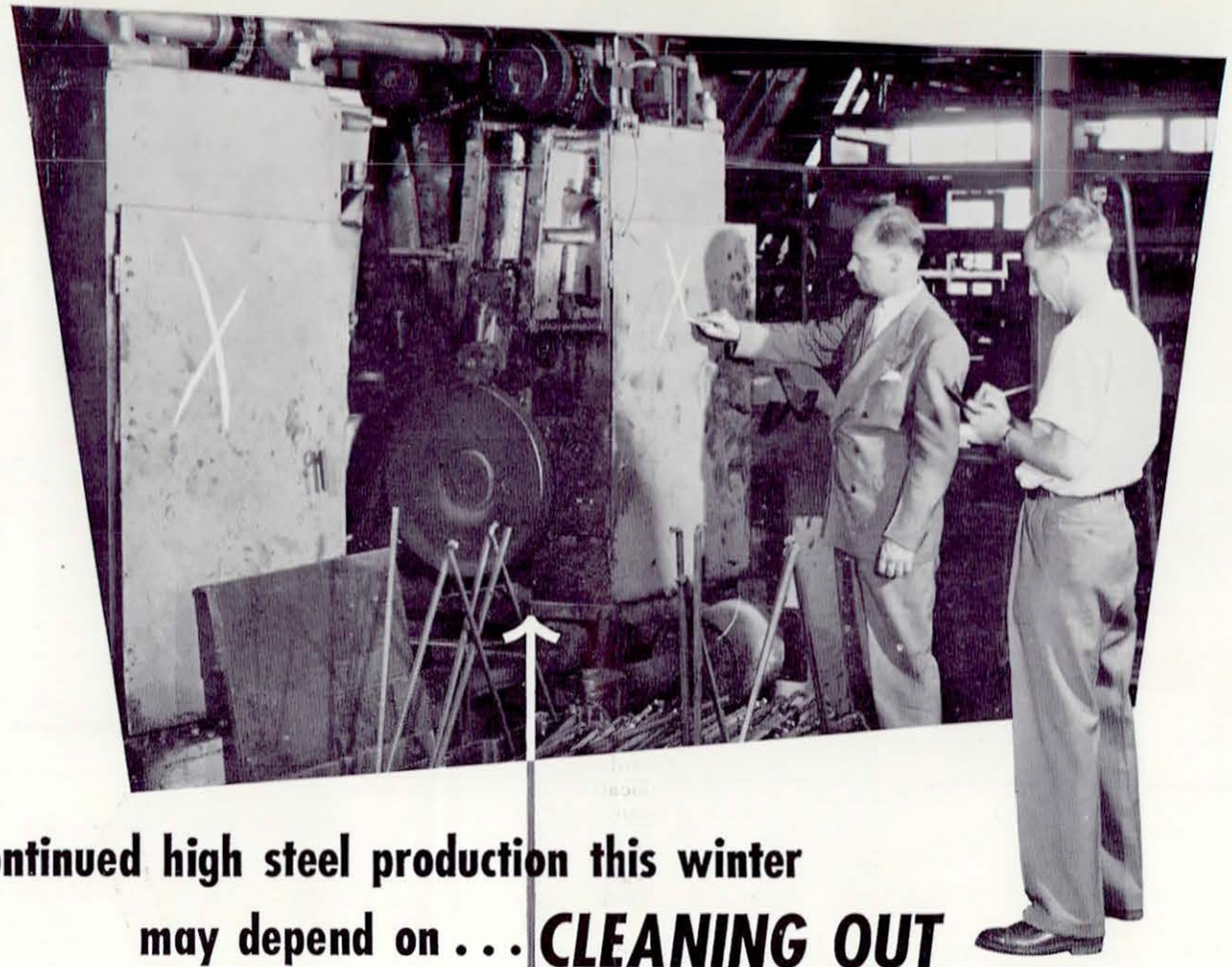
It's a proud heritage for the future.

For over a quarter of this century a.c.f. has been one of the "folks" who have played a part in the success of the Lackawanna through the construction of more than 10,000 passenger and freight cars. Modestly, we say, thanks for letting us help. American Car and Foundry Company.



a.c.f.

CAR BUILDERS TO AMERICA'S RAILROADS



Continued high steel production this winter may depend on . . . CLEANING OUT → YOUR SCRAP THIS MONTH

HOW TO TURN SCRAP INTO MONEY with an organized dormant scrap round-up in your plant:

1. Appoint a top executive with authority to make decisions to head the salvage drive.
2. Organize a Salvage Committee and include a member from every department.
3. Survey and resurvey your plant for untapped sources of dormant scrap. Encourage your employees to look for miscellaneous scrap and report it to the committee.
4. Sell your entire organization on the need to scrap unusable material and equipment.
5. Prepare a complete inventory of idle material and equipment. Tag everything not in use.
6. Start it back to the steel mills by selling it to your regular scrap dealer.
7. **KEEP AT IT!**

*__DORMANT SCRAP__ is any obsolete, broken or worn-out and irreparable machinery, tools, equipment, dies, jigs or fixtures, etc., that may encumber your premises.

Despite . . . and because of . . . the continued high rate of steel production, the steel industry is on a hand-to-mouth basis in its receipts of purchased scrap . . . *essential to production!* Mills that normally inventory a 60 day supply of scrap, are now maintaining high production with less than a week's supply on hand. *That the effect of winter on transport facilities could quickly exhaust these dangerously meager scrap inventories . . . and thus force a cut in steel production . . . is obvious.* Help assure an uninterrupted steel supply by rounding up and selling your dormant scrap* to your regular scrap dealer *this month!*

INLAND

INLAND STEEL COMPANY

38 South Dearborn Street • Chicago 3, Illinois

(Continued from page 114)
and in Rockwell Street yard, Chicago ($77,000); slide detector fences at 16 locations on the Clifton Forge and Hinton divisions ($493,000); remote control interlocking at Cabin Creek Junction, W. Va., and South Ruffner ($214,000); modernize interlocking at Newport, Ky. ($159,000); industrial tracks at Huntington, W. Va. ($105,000); installing steel spans in bridge 73, Dartmont, W. Va. ($77,000); replacing electrical wiring and providing power for I.B.M. machines in office building, Huntington ($64,000); yard office, toilet, wash and locker building, Cheviot, Ohio ($58,000); coal mine tracks, Wolf Pit, Ky. ($43,000); switchmen's building at Wadsworth Foundry and addition to 8th street switchmen's building, Saginaw ($47,000); mechanics' shop building, Columbus, Ohio ($27,000); coal mine tracks, Peach Creek, W. Va. ($24,000); rebuild bridge 3601, Barksdale, W. Va. ($23,400); and replace frame buildings with metal under-overpass, Charlottesville, Va. ($22,000).

Contracts have been awarded, at indicated estimated costs, to: The S. N. Nielsen Company, Chicago, for alterations in, and additions to, machine shops and enginehouses at Russell, Ky. ($340,000), and alterations and additions in enginehouses at Walbridge, Ohio ($160,000), and Parsons ($158,000), and enginehouse foundation and inspection pit at Huntington ($25,000); to Albergo Engineering, Inc., Chicago, for grading, drainage and track work for extending side tracks at eight locations from Drew to Peru ($183,000); to the Gustav-Hirsch Organization, Columbus, Ohio, for electric service in general office annex, Richmond, Va. ($51,700); to the Graver Tank & Mfg. Co., Philadelphia, for two 508,000-gal. steel fuel oil storage tanks at Russell, Ky. ($32,480), and one such tank at Walbridge ($17,328); to the Arthur Vollmer Construction Company, Saginaw, for a yard office at Midland, Mich. ($40,243); to the Winston Ford Company, Prestonsburg, Ky., for grading and drainage for coal mine tracks at Wolf Pit ($6,123); and to the Smith Construction Company, Huntington, for similar work at Peach Creek ($6,026).

Chicago, Rock Island & Pacific.—The I.C.C. has denied requests for reconsideration of the order authorizing this road to construct 33.8 miles of new line between Atlantic, Iowa, and McClelland. (*Railway Age*, August 20, page 72, and September 17, page 102.) The commission postponed the order after receiving petitions to reopen the case from groups opposing the project. Such opposition centered around the Rock Island's proposal to relocate its main line between Atlantic and Council Bluffs, of which the 33.8-mile construction is a part. Estimated cost of the new line is $7,453,554. The I.C.C.'s final order, with an October 12 effective date, said opponents of the Rock Island plan did not make a showing warranting reopening of the case.

Chicago, Rock Island & Pacific.—This road has begun a multi-million dollar expansion program at its Silvis, Ill., engine terminal. The present diesel shop will be enlarged by converting steam facilities into space for heavy diesel repairs.

New York, New Haven & Hartford.—The following projects have been authorized at the indicated probable costs: Automatic signal system, Poughkeepsie, N. Y.-Maybrook ($209,500); new interlocking at New Haven, Conn. ($591,000); track changes in Northrup Avenue yard, Providence, R. I. ($129,500); replacing bridge 15.26, Yalesville, Conn. ($75,000); converting hand-fired coal burners at various points to automatic oil burners ($74,525); reconstructing superstructure of bridge 11.21, Mystic, Conn. ($63,500); rebuilding trailer ramps and installing 50 ft. truck scale, Harlem River freight station, New York ($49,500); yard radio-telephone system at Providence Terminal ($32,844); and relocating freight facilities, Danielson, Conn. ($24,200).

Norfolk & Western.—A new classification yard, including a complete car retarder system, will be built at this road's Lamberts Point piers near Norfolk, Va., at a cost of $1,350,000. The new yard will be south of the present yard, between the roundhouse and the N. & W.'s new merchandise pier N. The 30 tracks in the new yard will have a total length of 9.7 mi. Preliminary grading has begun and is scheduled for completion by next January 15. Car retarders and switchers will be operated from a central tower on a hump to be constructed. Plans also call for new floodlights, signals and a loudspeaker and Teletype system. Installation of retarders, switches and track, as well as communications work, will be done by the road's own forces.

CAR SERVICE

Second Revised I.C.C. Service Order No. 856, which provides for the inclusion of Saturdays in computing demurrage on all freight cars, has been modified by Amendment No. 1, which set back the expiration date from October 15 to January 31, 1952.

Revised I.C.C. Service Order No. 872, which maintains the permit system governing movements of export grain to New Orleans, La., and Texas Gulf ports, has been modified by Amendment No. 1 which set back the expiration date from October 15 until January 31, 1952.

FINANCIAL

Missouri Pacific. — *Reorganization.*—A new hearing in this long-pending reorganization case has been ordered by the I.C.C. The hearing will be held November 27, in Washington, D. C., before Commissioner Rogers; Roger T. Boyden, assistant director of the commission's Bureau of Finance; and Vernon V. Baker, chief of the Loans and Reorganization Section of the Bureau of Finance.

According to a commission notice, the new hearing will be for the purpose "of receiving evidence of any changes, facts or developments which have occurred since the approval by the commission of the plan of reorganization," early in 1950. That plan is now pending on the matter of confirmation before the U. S. District Court for the Eastern District of Missouri at St. Louis.

The commission will study any changes or developments which may make it necessary to reconsider or revise the plan so that it will be "fair and equitable and in the public interest."

This request for further consideration of the reorganization plan was referred to the commission from the court last July. Parties representing various bondholding groups filed the request with the court. While the commission had the bondholders' petition under advisement the "independent directors" of the M.P. moved to have the commission declare the petition invalid and reject it. In setting the November 27 hearing the commission specifically overruled this motion.

The I.C.C. has modified an order issued by its Division 4 last February, and has awarded additional compensation for counsel representing some of the parties in this case, for the period January 8, 1945, to March 27, 1950. (*Railway Age*, March 5, page 82.)

New Jersey & New York.—*Reorganization.*—I.C.C. Examiner John L. Bradford has recommended that the commission approve a plan for ending this road's reorganization proceedings. Among other things, Examiner Bradford would authorize sale of the road to the Erie for $1,500,000. Proceeds from this sale, together with reserve funds and current assets, would be applied toward payment of administrative expenses, court allowances and claims secured by liens, in that order. Administrative expenses alone, however, "now aggregate more than $2,000,000," the examiner said.

Considering various proposals for reorganization, Examiner Bradford concluded that no internal reorganization of the road could be carried out in the foreseeable future. He noted that operation of the properties under the trustee has resulted in "relatively huge deficits," but said evidence indi-

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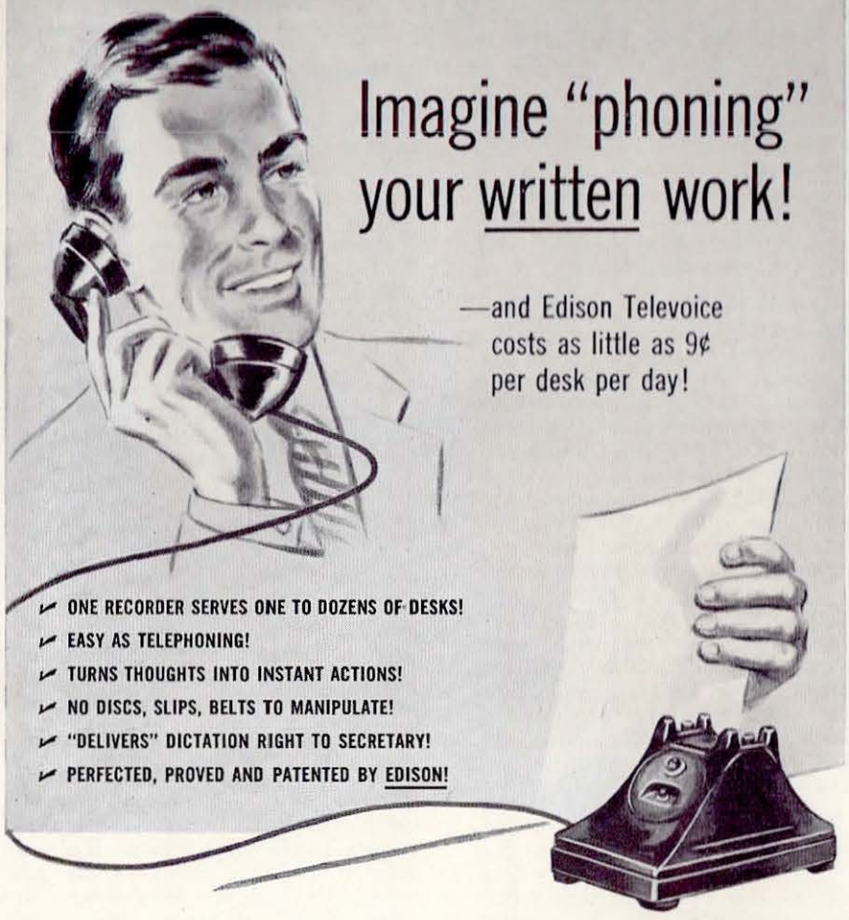
Imagine "phoning" your written work!
—and Edison Televoice costs as little as 9¢ per desk per day!
ONE RECORDER SERVES ONE TO DOZENS OF DESKS!
EASY AS TELEPHONING!
TURNS THOUGHTS INTO INSTANT ACTIONS!
NO DISCS, SLIPS, BELTS TO MANIPULATE!
"DELIVERS" DICTATION RIGHT TO SECRETARY!
PERFECTED, PROVED AND PATENTED BY EDISON!

Believe it or not, that's a dictating instrument the man above is using—the sensational new EDISON TELEVOICEWRITER! Here's a design for you—like the telephone you've used for years—that *invites* use. You simply *phone* your written work, without delay or effort, directly to the recorder at the *secretary's* desk. You enjoy free-line service with Edison-engineered circuits scientifically matched to your work-load demand. Work flows out, productivity is boosted, for staffs large or small. Televoice cuts instrument dictation costs as much as 66⅔%! Rent it or buy it—but *try* it! See what wonders it can work for you—now!

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EDISON, 82 Lakeside Ave., W. Orange, N. J.

Okay—send me A LINE ON TELEVOICE

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GET THE WHOLE STORY—NOW! Send for this new descriptive booklet. Or, to arrange a demonstration, call "EDIPHONE" in your city. In Canada: Thomas A. Edison of Canada, Ltd., Toronto 1, Ontario.

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cates the road can be operated profitably as a part of the Erie system.

The Erie already owns a majority of the common stock of the N.J.&N.Y., and has operated the 28-mile line since 1912. The short line instituted bankruptcy proceedings in 1938 when the Erie was undergoing reorganization, but when the Erie plan was finally approved no provision was made for the N.J.&N.Y. The Erie already has an application pending before the I.C.C. for authority to purchase the N.J.&N.Y. (*Railway Age*, April 9, page 74).

Reading.—*Merger of Subsidiaries.*—Division 4 of the I.C.C. has approved this road's plan for merging the East Mahanoy and Mine Hill & Schuylkill Haven into the Reading. All capital stock of East Mahanoy is owned by the Reading. The latter, together with its subsidiaries, also owns all but 787 shares of M.H.&S.H. stock. Both the E.M. and M.H.&S.H. will be dissolved, and the Reading will acquire direct ownership of the properties. The E.M. is an 8.3-mile line extending from a point near Tamaqua, Pa., to St. Nicholas. The M.H.&S.H. consists of 51.9 miles of branch line in three Pennsylvania counties. Stock of the latter road which is held by the public will be exchanged for Reading first preferred at the ratio of 1 1/5 to 1.

Western Pacific.—*First and Refunding Mortgage Bonds.*—Division 4 of the I.C.C. has authorized this road to use the unexpended balance of $6,001,416, from sale of its first and refunding mortgage bonds, to reimburse its treasury in part for equipment costs in 1951 and 1952. (*Railway Age*, September 17, page 106.) The $6,001,416 was intended originally to be used in redeeming W.P.'s outstanding general mortgage 4½ per cent income bonds, but only $90,200 of such bonds were turned in under the road's conversion offer. Holders of $6,023,100 of the general mortgage bonds elected to convert their bonds into W.P. common stock prior to the redemption date.

Dividends Declared

ELMIRA & WILLIAMSPORT.—$1.19, semiannual, payable November 1 to holders of record October 19.

MONTGOMERY & ERIE.—17½c, semiannual, payable November 10 to holders of record November 1.

WHEELING & LAKE ERIE.—common, $1.43¾, quarterly; 4% prior lien, $1, quarterly, both payable November 1 to holders of record October 19.

Security Price Averages

	Oct. 9	Prev. Week	Last Year
Average price of 20 representative railway stocks	57.35	56.51	48.15
Average price of 20 representative railway bonds	93.46	93.45	95.60

RAILWAY OFFICERS

EXECUTIVE

As reported in *Railway Age* October 1, **Ralph C. Champlin** has been elected vice-president in charge of public relations of the PENNSYLVANIA, a new office just created by the road's board of directors. Mr. Champlin, who is to take office on October 15, has been director of public relations of the Ethyl Corporation since 1939, and has had experience in all phases of this work, including advertising and employee and community relations. His appointment "marks a new development in the Pennsylvania's public relations in establishing at the executive level a department head to carry on this function." **G. E. Payne,** who has been in charge of the publicity department at Philadelphia, will continue in that capacity and the firm of Ivy Lee and T. J. Ross will continue as consultants.

Mr. Champlin was born at Augusta, Ga., on October 13, 1904, and attended the University of Florida (1926). After completing his college course, he worked for a short period in the Phil-

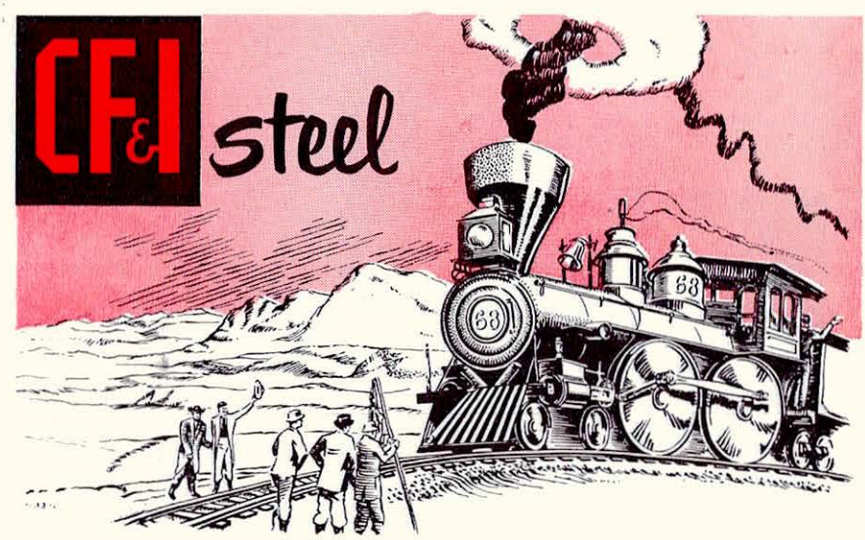
Ralph C. Champlin

adelphia branch of the William H. Rankin advertising agency and then in the circulation department of Hearst International Magazines at New York, where he became newsstand sales promotion manager for Cosmopolitan and Good Housekeeping magazines. For eight years, beginning in April 1929, Mr. Champlin was employed as a copywriter for Batten, Barton, Durstine & Osborne at New York, working on the Ethyl gasoline account, among others. This led to his becoming assistant to the president of the Ethyl Corporation in February 1937 and director of public relations in 1939. Since then, at various times, he has also had charge of advertising and employee relations. During the war he served for some months as manager of the Rubber Conservation Program for the Division of Information of the War Production Board. He was chairman of the National Conference of Business Public Relations Executives in 1944, and in 1949 and 1950 was chairman of the Public Relations Committee of the Chamber of Commerce of the State of New York. In 1948 he was chairman of the Oil Industry Information Committee of the American Petroleum Institute.

Harry W. Watson, auditor of the CHICAGO & ILLINOIS MIDLAND, has been elected vice-president—operations. **Vance H. Williams,** general traffic manager of the road, has been elected vice-president—traffic. Both positions are newly cr...d.

A. J. Gignac has been appointed assistant to vice-president of the GRAND TRUNK WESTERN at Detroit.

The MINNEAPOLIS, NORTHFIELD & SOUTHERN has announced the appointment of **H. E. Pence,** executive vice-president, as senior vice-president. He is succeeded by **O. D. Nelson,** former traffic manager. **E. J. Sexton,** traffic manager, has been appointed vice-president—traffic. **J. R. Branley,**



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CF&I quality rails and fastenings will continue to meet the demands of Western Trails.

CF&I RAILS & FASTENINGS

THE COLORADO FUEL AND IRON CORPORATION CF&I

general manager, has been named vice-president—operations.

Louis J. Hensley, vice-president, comptroller and secretary of the KANSAS CITY SOUTHERN, has retired, effective October 1. He is succeeded as comptroller by **Walter F. Pregge,** auditor for the LOUISIANA & ARKANSAS, a K.C.S. subsidiary.

FINANCIAL, LEGAL & ACCOUNTING

Stuart T. Saunders, assistant general counsel of the NORFOLK & WESTERN, has been appointed general counsel, with headquarters as before at Roanoke, Va., succeeding the late **F. M. Rivinus.** Mr. Saunders was born in McDowell county, W. Va., on July 16, 1909, and was graduated from Roanoke College in 1930. After working a year for the Virginia State

Stuart T. Saunders

Highway Commission, he entered Harvard Law School, receiving his law degree in 1934. Mr. Saunders then joined the Washington law firm of Douglas, Obear & Campbell, of which he was a partner when he became assistant general solicitor of the N. & W. on April 1, 1939. He was promoted to assistant general counsel on November 1, 1947.

Thomas N. Cook, general attorney for the CHICAGO & EASTERN ILLINOIS, has been appointed general solicitor. He is succeeded by **Gerald L. Phelps,** who becomes general attorney and commerce counsel.

Edwin H. Schwer has been promoted to assistant real estate agent of the Western region of the PENNSYLVANIA, at Chicago.

Vernon Eaves, special accountant on the TEXAS & NEW ORLEANS, has been appointed assistant to auditor, with headquarters as before at Houston.

S. H. Barnhart, assistant comptroller of the NORFOLK & WESTERN at Roanoke, Va., has been appointed to the new position of tax commissioner. He will be assisted by **C. E. Lex, Jr.,** assistant tax commissioner, and **W. F. Crueger,** tax and insurance agent. Mr. Barnhart was born in Shepherdstown, W. Va., and was graduated from Shepherd College there. He entered the service of the N.&W. in July 1905 as a machinist apprentice at the Roanoke shops and became assistant engineer of tests in March 1910. He later served as foreman of the wheel shop, engine inspector, assistant roundhouse foreman and assistant valuation engineer. Mr. Barnhart transferred to the valuation department in June 1929 and was promoted to assistant to comptroller in 1933, advancing to assistant comptroller in March 1937. He is chairman of the Southeastern Railroads' Tax Conference and is active in committee work of the Association of American Railroads and the American Railway Engineering Association.

William H. Ball, chief clerk to the treasurer of the BALTIMORE & OHIO at Baltimore, has been appointed assistant treasurer.

Russell T. Walker, assistant general attorney of the NEW YORK CENTRAL at Detroit, has been named assistant to secretary at New York.

Paul J. Wimsey, general solicitor for the CHICAGO & EASTERN ILLINOIS, has retired, as of October 1. Mr. Wimsey first worked for the C.&E.I. as a clerk-stenographer at St. Elmo, Ill., in 1905 and was employed as a claim agent while studying law at the Chicago Kent School of Law at night. He was admitted to the bar in 1919. Mr. Wimsey then served a coal firm and several banks and subsequently joined the law firm of Kirkland, Fleming, Green, Martin & Ellis. In 1933 he was appointed assistant treasurer of the state of Illinois, and in 1936 rejoined the C.&E.I. as general tax attorney. He was appointed general solicitor in 1949.

H. W. Kerns, assistant freight claim agent of the PENNSYLVANIA at Philadelphia, retired on September 30. **H. A. Sides,** also assistant freight claim agent at Philadelphia, succeeds Mr. Kerns. **W. B. Groton,** district freight claim agent, has been appointed assistant freight claim agent, with headquarters as before at Philadelphia, succeeding **J. H. Mecouch,** who replaces Mr. Sides.

F. F. Minger has been appointed real estate and tax agent of the NEW YORK CENTRAL, at Chicago, succeeding **J. H. Mitchell,** retired.

Walter F. Pregge, auditor of the LOUISIANA & ARKANSAS, subsidiary of the KANSAS CITY SOUTHERN, at Shreveport, La., has been promoted to comptroller of both the L.&A. and K.C.S. at Kansas City. **F. J. Slimer,** assistant auditor of the L.&A., succeeds Mr. Pregge as auditor, with headquarters as before at Shreveport. **H. S. Souerwine** has been appointed assistant auditor of the L.&A. at Shreveport.

Norman F. Lincoln, cashier on the ST. LOUIS-SAN FRANCISCO, has been appointed assistant treasurer, to succeed the late **H. Boyd Fletcher. Harry Ragland** succeeds Mr. Lincoln as cashier, with headquarters at St. Louis.

John W. Adams, Tuscaloosa (Ala.) attorney, has been appointed attorney for the GULF, MOBILE & OHIO, with headquarters in Mobile, Ala. He succeeds **Carroll T. Prince,** retired after 51 years of service.

OPERATING

As reported in *Railway Age* August 27, **Eugene H. Cook** has been appointed superintendent of the Montgomery district of the ATLANTIC COAST LINE at Montgomery, Ala., succeeding **William Marvin Black,** retired. Mr. Cook was born at Whiteville, N. C., and entered the service of the A.C.L. as a mail clerk at Pembroke, N. C., in 1918. Since that time he has held positions as car distributor, baggage agent, dispatcher, chief dispatcher and trainmaster.

Mr. Black was born at Banks, Ala., on July 5, 1884, and entered railroad service on June 8, 1899, with the Plant System, which was acquired by the A.C.L. in 1902. He served successively as telegraph operator, dispatcher, chief dispatcher, trainmaster and superintendent.

I. W. McPherson, assistant general manager of the MINNEAPOLIS, NORTHFIELD & SOUTHERN, has been appointed general manager, succeeding **J. R. Branley** who has been named vice-president—operations.

G. E. Warfel has been appointed trainmaster of the ST. LOUIS-SAN FRANCISCO at Springfield, Mo. He was formerly roadmaster at Ft. Smith, Ark. **A. C. Hart** has been transferred to terminal trainmaster at Springfield from a similar position at Memphis. **L. J. King, Jr.,** terminal trainmaster at Springfield, replaces Mr. Hart at Memphis.

The TEXAS & NEW ORLEANS has announced the following changes in operating personnel: **O. W. Story,** assistant superintendent of the San Antonio division, at San Antonio, appointed assistant superintendent of that division at El Paso, succeeding **F. W. H. Wehner,** appointed trainmaster at El Paso; **J. W. Kraemer,** assistant superintendent at Victoria, to succeed Mr. Story at San Antonio; **J. D. Ramsey,** trainmaster of the Lafayette division, appointed assistant superintendent at Victoria; **B. A.**

Archer, assistant trainmaster on the San Antonio division, appointed trainmaster at Lafayette; **S. E. Tanner,** assistant trainmaster of Houston Terminals division, appointed trainmaster; **R. A. Porter,** supervisor of freight protection (l.c.l.), merchandise and station service, at Houston, appointed supervisor of methods and standardization, still at Houston; and **A. D. Cross** appointed to Mr. Porter's former position.

Arthur C. McCarthy, general superintendent for the GRAND TRUNK WESTERN, has been appointed general manager, while **C. A. Skog,** formerly vice-president and general manager, continues as vice-president.

H. S. Daniels has been appointed terminal trainmaster of the SOUTHERN PACIFIC at Roseville, Cal.

D. F. Carpenter, assistant superintendent of rules and safety on the ST. LOUIS SOUTHWESTERN at Pine Bluff, Ark., has been promoted to assistant superintendent at Illmo, Mo. **G. R. Knight,** train dispatcher at Illmo, has been appointed to succeed Mr. Carpenter at Pine Bluff.

Norman W. Soergel, trainmaster of the Milwaukee Terminals division of the MILWAUKEE, has been transferred to the Dubuque & Illinois division at Savanna, Ill. He is succeeded by **Robert C. Jones,** trainmaster at Green Bay, Wis.

William M. Reese, brakeman and conductor on the SOUTHERN, has been appointed terminal trainmaster at Cincinnati.

Frederick B. Lunt has been appointed manager of the highway division and superintendent of dining car service of the BANGOR & AROOSTOOK at Bangor, Me. Mr. Lunt is a native of Waterville, Me., and attended the University of Maine. From 1932 to 1934 he was associated with the Maine Central. In 1934 he joined the B.&A. operating department, transferring to the newly-formed highway division in 1936. In 1942 he was promoted to supervisor of highway and dining car operations and in 1949 he was appointed assistant to passenger traffic manager, which position he held until his recent appointment.

TRAFFIC

Leonard V. Caverly has been appointed assistant to general passenger agent of the CHICAGO, ST. PAUL, MINNEAPOLIS & OMAHA, at St. Paul, to succeed **George G. MacCarthy,** recently promoted to general agent, passenger department, of the CHICAGO & NORTH WESTERN, at Milwaukee. (*Railway Age*, August 13.)

C. S. Bramlett, division freight and passenger agent of the SOUTHERN,

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DUST HOOD
Lightweight and Comfortable
Can be used with any WILLSON single filter respirators for dusts, mists, gases, vapors. Available without respirator.
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has been appointed assistant general freight and passenger agent, with headquarters as before at Spartanburg, S. C., succeeding **Robert C. Cotner,** whose retirement was announced in *Railway Age* September 24. **G. M. Harvley,** commercial agent, has been promoted to district freight and passenger agent at Spartanburg, succeeding **J. R. Brockman,** who succeeds Mr. Bramlett as division freight and passenger agent.

W. J. Woods, traveling freight and passenger agent of the PENNSYLVANIA in Phoenix, Ariz., has been promoted to district freight and passenger agent there, succeeding **T. A. Metzger,** who died recently.

John P. Heavers has been appointed general agent of the FORT WORTH & DENVER at Houston, Tex., succeeding **J. E. Meroney,** who has retired after 40 years of service.

W. M. Mountcastle, Jr., has been appointed assistant general freight agent of the CHESAPEAKE & OHIO at Richmond, Va., succeeding **R. S. Gilman,** assigned to other duties.

H. W. Schwartz has been appointed general agent of the ATLANTIC COAST LINE at New York.

R. A. Kinnear, agent for the MILWAUKEE at Port Angeles, Wash., has been appointed general agent at Everett, Wash., succeeding **C. M. Owen,** retired after 42 years of service.

George E. Pickel, city passenger agent of the ILLINOIS CENTRAL, at New Orleans, has been appointed district passenger agent at Jackson, Miss., succeeding **Walter Byrns,** retired after 49 years of service. **William O. Prather,** assistant manager, forest products bureau, has been appointed chief inspector of the forest products bureau at Memphis. He succeeds **George D. Tombs,** bureau manager, who died recently. **Wilbur Vaughan,** agricultural agent in Louisiana, has been appointed agricultural and forestry agent for west Tennessee, with headquarters at Jackson, Tenn.

Carl H. Groninger, assistant freight traffic manager of the BALTIMORE & OHIO, has been appointed freight traffic manager, with headquarters as before at Chicago, succeeding **A. L. Doggett,** retired.

G. M. French, general agent, passenger department, of the GREAT NORTHERN, in charge of the St. Paul city ticket office, has been appointed assistant general passenger agent in charge of the Chicago city ticket office, succeeding **A. A. Hughes,** who died September 22. **S. T. Thorson,** district passenger agent, St. Paul, replaces Mr. French at the St. Paul city ticket office. Mr. Thorson is succeeded by **R. J. Class,** traveling passenger agent, St. Paul, and he is in turn succeeded by **H. L. Gibson,** city passenger agent at St. Paul.

R. N. Hanson, has been appointed traffic manager of the MINNEAPOLIS, NORTHFIELD & SOUTHERN, with headquarters in Minneapolis. **A. C. Doenges,** assistant freight agent, has been named general freight agent.

The CLINCHFIELD has appointed **W. H. Mitchell** as general freight agent, with headquarters at Cincinnati. The position of general northern agent, formerly held by Mr. Mitchell, has been abolished.

Carl E. Delano has been appointed general passenger traffic manager and director of personnel and publicity of the BANGOR & AROOSTOOK at Bangor, Me. **J. F. Smith,** passenger traffic manager, has been appointed passenger traffic manager—rail.

John P. Monks, general agent of the AKRON, CANTON & YOUNGSTOWN, has been promoted to general eastern agent, with headquarters as before at New York, succeeding **F. A. Carlson,** resigned.

Samuel S. McKinlay, general coal freight agent of the BALTIMORE & OHIO at Pittsburgh, has been transferred to Cleveland, succeeding **George C. Bauer,** whose appointment as coal traffic manager at Baltimore, was reported in *Railway Age* September 24. **James A. Wilson,** coal freight agent at Cincinnati, succeeds Mr. McKinlay at Pittsburgh. **C. E. Schroeder,** coal traffic representative at Chicago, has been appointed coal freight agent at Detroit, succeeding **W. F. Deets,** who replaces Mr. Wilson at Cincinnati.

R. N. Sinclair, district freight agent on the GULF, MOBILE & OHIO, at Cincinnati, has been appointed western traffic manager, with headquarters at Los Angeles. Replacing Mr. Sinclair in Cincinnati is **L. W. Heist,** who has been in the sales and service department in Kansas City, Kan. **Earl Goslee,** freight traffic manager at Los Angeles, has retired after 27 years of service. **C. E. Thomas,** division freight traffic manager at Montgomery, Ala., has been moved to Mobile, Ala., in the same position. He succeeds **O. D. Penniman,** who died recently. **Glenn Keen,** division freight agent at Columbus, Miss., has been moved to Montgomery to fill the vacancy caused by Mr. Thomas' transfer. **J. B. Flock,** division freight agent at Albany, Ga., has been moved to Columbus to replace Mr. Keen. **H. W. Bell,** assistant general freight agent at Atlanta, Ga., has been appointed division freight and passenger traffic manager at Peoria, Ill., succeeding **C. E. Norris,** retired after 35 years of service.

Mr. Sinclair has been with the

G. M. & O. since 1927, when he was employed at Jackson, Miss. He has worked in New Orleans, and travelled in the Houston and San Antonio districts, and in St. Louis, travelling in in Indiana and Kentucky.

MECHANICAL

The ILLINOIS CENTRAL has announced the following changes in personnel of its mechanical department: **R. W. Ellis,** general master mechanic of the Iowa division at Waterloo, Iowa, succeeds **W. L. Jones,** master mechanic of the Illinois division at Champaign, Ill., who is retiring after 44 years of service; **E. L. Walston,** general foreman at East St. Louis, Ill., succeeds Mr. Ellis; **A. Blankinship,** general foreman at Johnston shop, Memphis, Tenn., has been appointed to fill the new position of master mechanic of the Kentucky division, with headquarters at Paducah, Ky.; **R. W. Ballard,** diesel supervisor at Chicago, becomes master mechanic at Jackson, Tenn., to replace **J. W. Martin,** assigned to other duties; and **R. J. Chinn** has been appointed master mechanic at McComb, Miss., to replace **G. E. Bell,** master mechanic at McComb, who replaces Mr. Chinn at Vicksburg.

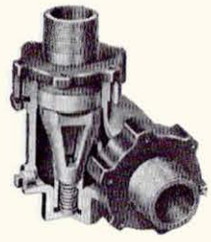
Perry D. Hawkins, assistant general air brake inspector of the ERIE, has been appointed general air brake inspector, with headquarters as before at Cleveland, succeeding **George H. Higley,** who has retired under the pension rules of the company after more than 48 years of service.

The position of assistant chief mechanical officer of the SEABOARD AIR LINE at Jacksonville, Fla., held by **S. D. Dekle,** has been abolished, and Mr. Dekle has been appointed master mechanic of the North Florida division at Jacksonville, succeeding **J. G. Carlton,** who has been transferred to the Georgia division at Atlanta (Howells), Ga. Mr. Carlton suceeds **W. J. Suber,** assigned to other duties.

S. T. Kuhn, assistant superintendent equipment of the NEW YORK CENTRAL, Lines West of Buffalo, at Chicago, has been appointed assistant to general superintendent equipment of the system at New York. **G. S. Glaiber,** assistant superintendent equipment, Lines Buffalo and East, has been appointed general car inspector of the system, with headquarters as before at New York. **W. H. Chidley,** master mechanic at Albany, N. Y., has been transferred to New York. **G. W. Nelson,** assistant master mechanic at Syracuse, N. Y., has been appointed special assistant to manager equipment at New York.

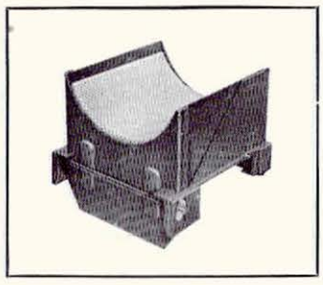
Francis L. Morrison, traveling electrical inspector for the ILLINOIS CENTRAL, has been appointed general air brake engineer, with headquarters at Chicago. He succeeds **Angelo J.**

use Franklin parts on Franklin devices

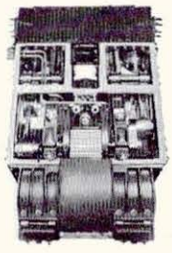


Sleeve Joints

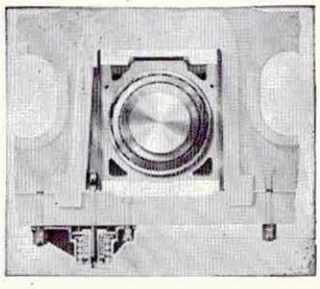
In order to obtain full efficiency from your Franklin devices, specify genuine Franklin parts in replacement. Franklin devices will always perform best when equipped with genuine Franklin parts made to interchangeable tolerances and of the correct materials.



Driving Box Lubricators

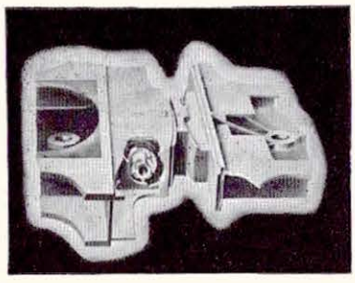


The Locomotive Booster

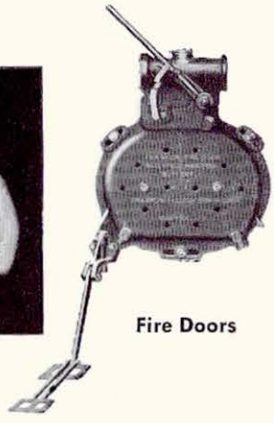


Automatic Compensators & Snubbers

Franklin System of Steam Distribution



Radial Buffers



Fire Doors

Power Reverse Gears

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NATIONAL RUBBER-CUSHIONED DRAFT GEARS

cushion the ride behind 9 out of 10 heavy diesels

TYPE M-380

In National Rubber-Cushioned Type M-380 Draft Gear two pairs of rubber pads cushion loads well beyond 500,000 lbs.

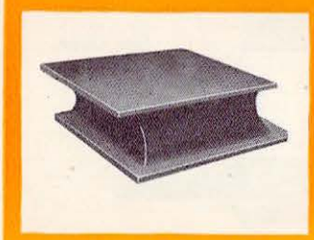
THE National Rubber-Cushioned Type M-380 Draft Gear shown here cushions the ride behind 9 out of 10 heavy diesel and electric locomotives. Here are some of its basic advantages:

Does Not Creep under sustained loads.

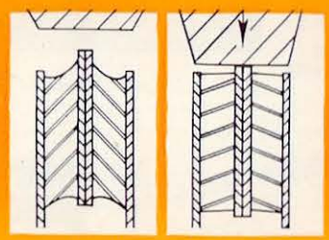
Reserve Dynamic Capacity—For the best combination of soft riding action and high shock absorption, dynamic capacity of a gear must be greater than its static capacity. The dynamic capacity of the National Type M-380 Gear actually increases with shock severity.

Durability—The Type M-380 Gear gives outstanding service for years. Rugged construction and simple design assure a gear with longer life, greater efficiency.

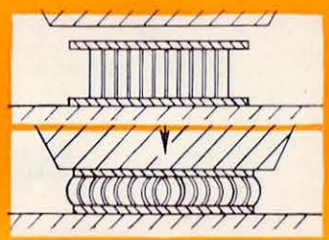
For more information on National Rubber-Cushioned Draft Gears, write for Circular No. 5047, National Malleable & Steel Castings Co. A-4253



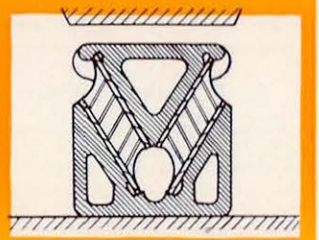
Basic unit in National Type M-380 Draft Gears is this rubber pad bonded between steel plates. It cushions the load in two important ways.



Shear loading, which applies force to the edges of each of the two plates, is highly responsive to light shocks . . . like a long-travel, low-capacity spring.



Compression loading permits much greater loads than the same quantity of rubber in shear . . . comparable to a high-capacity, short-travel spring.



Combination loading of National Type M-380 Draft Gears combines sensitiveness of shear loading with capacity of compression loading.

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Pichetto, retired after 47 years of service. **J. S. Duck** has been appointed diesel supervisor—system at Chicago, succeeding **R. W. Ballard,** who has been promoted to master mechanic at Jackson, Tenn.

Walter L. Huebner, master mechanic for the SANTA FE in Chicago, has been appointed superintendent of shops at Barstow, Cal. **Harold Mackey,** master mechanic at Argentine, Kan., will succeed Mr. Huebner. **Vernon L. Marlo,** superintendent of shops at Barstow, will move to Argentine as master mechanic.

PURCHASES & STORES

Karney E. Peck has been appointed division storekeeper of the ERIE at Hornell, N. Y., succeeding **Francis P. Williams,** who has been promoted to stationer at Hornell.

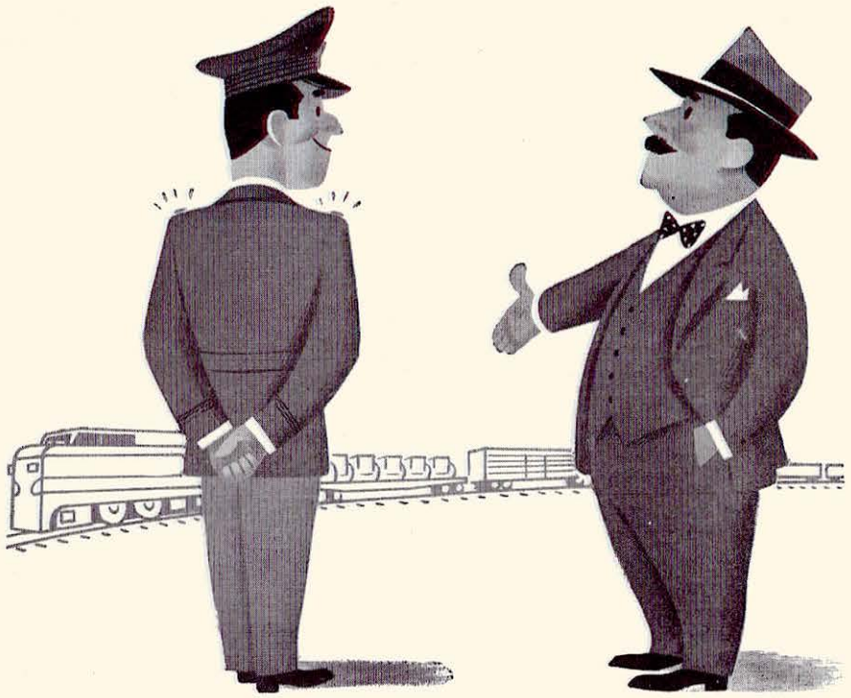
R. J. Burns, chief of the order bureau of the CHESAPEAKE & OHIO, has been appointed assistant to purchasing agent, with headquarters as before at Cleveland.

ENGINEERING AND SIGNALING

R. A. Emerson, assistant chief engineer of the CANADIAN PACIFIC, has been appointed chief engineer, with headquarters as before at Montreal, succeeding **John E. Armstrong,** who has retired after 39 years of service with the C.P. A photograph and biography of Mr. Emerson were published in *Railway Age* November 11, 1950, page 110.

Mr. Armstrong was born at Peoria, Ill., on September 29, 1886, and attended Bradley Polytechnical Institute at Peoria before going to Cornell University (C.E.1908). He entered railroad service with the Toledo, Peoria & Western in 1901, serving in various capacities during summer vacations until 1908. His first job after college was assistant on the engineer corps of the Pennsylvania at Cleveland, which

John E. Armstrong



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Also, there are many other railroad properties, especially electric switch gear rooms, fuel oil pump rooms, locomotive terminals, repair shops, signal towers, store rooms and passenger station electric stairways, that need up-to-date C-O-TWO Railroad Fire Protection Equipment.

Remember fire doesn't wait . . . so, why not let an expert C-O-TWO Railroad Fire Protection Engineer help you now in planning economical, fully approved fire protection facilities. Write today for complete free information . . . no obligation.

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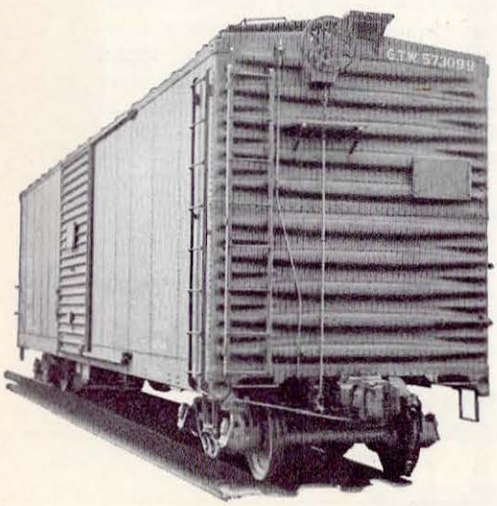

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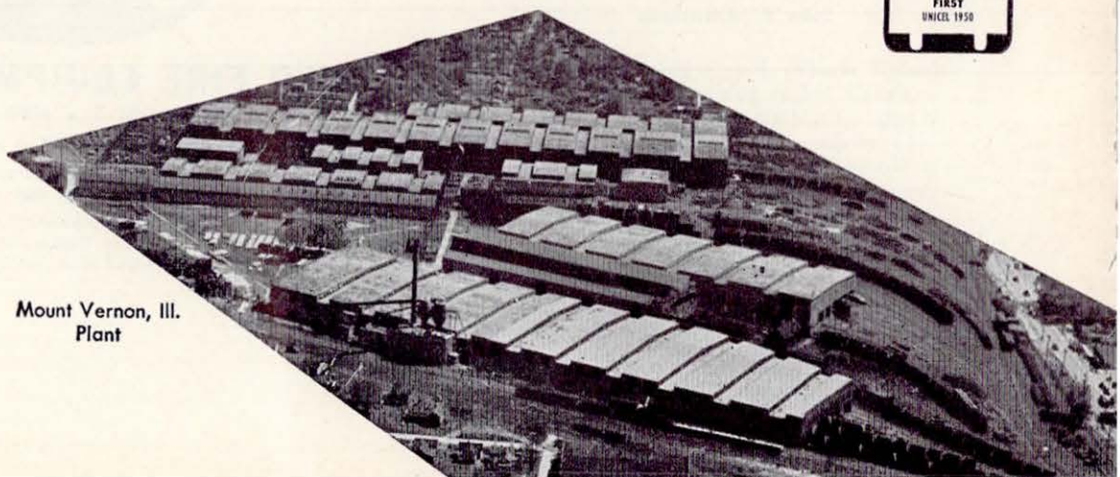

Mount Vernon, Ill.
Plant

he left in 1912 to join the C.P. as assistant engineer at Montreal. In 1928 Mr. Armstrong was named assistant chief engineer and in 1939 he became chief engineer. He is a past president of the Engineering Institute of Canada, the American Railway Engineering Association and the Canadian Railway Club.

As reported in *Railway Age* August 27, **B. V. Bodie** has been named chief engineer of the GULF, MOBILE & OHIO at Mobile, Ala. Mr. Bodie was employed by the Gas Electric & Power Co. of Baltimore in an engineering capacity for several years be-

B. V. Bodie

fore entering the service of the G. M. & O. in Bloomington, Ill., in 1935 as rodman and instrumentman in the division engineer's office. Following a series of promotions, he became superintendent of the Eastern division at Bloomington in 1947, in which capacity he served until his recent appointment as chief engineer.

T. L. Carlson, signal engineer on the CHESAPEAKE & OHIO at Richmond, Va., has been appointed superintendent at signals. He succeeds **G. A. Washburn,** retired. Succeeding Mr. Carlson as signal engineer is **Edward A. Burgin,** formerly general signal inspector at Huntington, W. Va.

As reported in *Railway Age* August 27, **Karl Huffman** has been appointed chief engineer of the Central region of the CANADIAN NATIONAL at Toronto. Mr. Huffman was born at Toronto on May 12, 1889, and was graduated from the University of Toronto, Faculty of Applied Science, civil engineering, in 1911. During summer months while attending the university, Mr. Huffman was employed on surveys on location for the Temiskaming & Northern Ontario (now Ontario Northland) and in the Toronto engineering drafting department of the Canadian Northern (now C.N.). He was also identified with land surveys for the Department of the Interior, establishing land lines west of Edmonton, Alta., so that railway lands and coal claims could be granted by the Crown. He obtained his certificate as a Dominion land surveyor in 1913 and as an Ontario land surveyor in 1914. Mr. Huffman commenced service with the C.N. in January 1912 in the engineering department, on railway location and land surveys, sub-

Karl Huffman

sequently becoming assistant division engineer and division engineer, successively, of the Capreol division. In February 1940 he was appointed engineer of construction and fire prevention of the Central region at Toronto, in which capacity he served until his recent appointment.

C. A. Colpitts, engineer of track of the CANADIAN PACIFIC, has been appointed assistant chief engineer, with headquarters as before at Montreal, succeeding **R. A. Emerson,** who has been appointed chief engi-

C. A. Colpitts

neer. **John E. Armstrong, Jr.,** assistant engineer of track, succeeds Mr. Colpitts as engineer of track. Mr. Colpitts first joined the engineering department of the C. P. in the West in 1926, taking up permanent work after graduation from the University of Manitoba, in his native Winnipeg. Following a series of moves through the Prairie provinces, Mr. Colpitts became division engineer at Saskatoon, Sask., in 1941, subsequently transferring to Vancouver, B. C., where he became assistant district engineer in 1949. In March 1950 he was named district engineer at Vancouver and seven months later he became engineer of track at Montreal.

Mr. Armstrong first worked for the C. P. during the summers of 1928 to 1931 at Toronto and London, Ont. In 1938, following graduation from McGill University, he rejoined the C. P. at Montreal and in 1939 was transfer-

John E. Armstrong, Jr.

red to Toronto. Mr. Armstrong was named division engineer at Trenton, Ont., in 1940, transferring to Sudbury four years later. He was district engineer at North Bay, Ont., from 1948 until early this year, when he moved to St. John, N. B. He was named assistant engineer of track in April.

R. M. Smith, division engineer of the Omaha and Northern Kansas divisions, of the MISSOURI PACIFIC, has been appointed district engineer, Western district, at Kansas City, Mo. He succeeds **J. R. Nagel,** retired after 44 years of service. Mr. Smith is succeeded by **G. M. Strawhun,** who will have headquarters in Fall City, Neb.

H. F. Dully, assistant division engineer of the Shasta division of the SOUTHERN PACIFIC, has been appointed division engineer of the same division, with headquarters at Dunsmuir, Cal., succeeding **K. C. Brunner,** who has been transferred to the general office.

SPECIAL

Ray Hill, assistant to vice-president in charge of personnel for the CHICAGO & EASTERN ILLINOIS, has been named director of personnel. He replaces **Glenn B. Henderson,** vice-president, who has retired, effective October 1, after more than 48 years of service.

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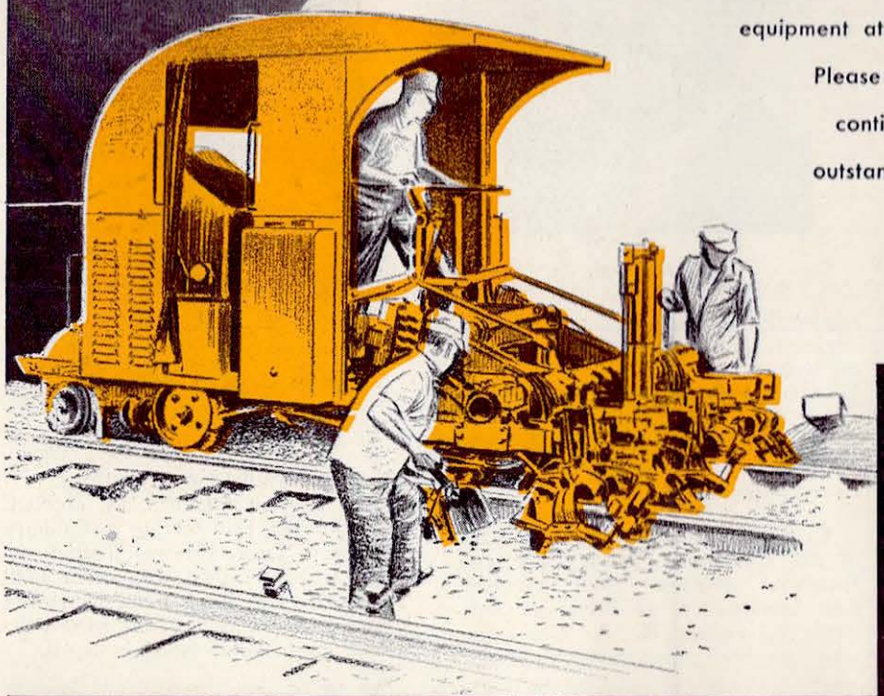

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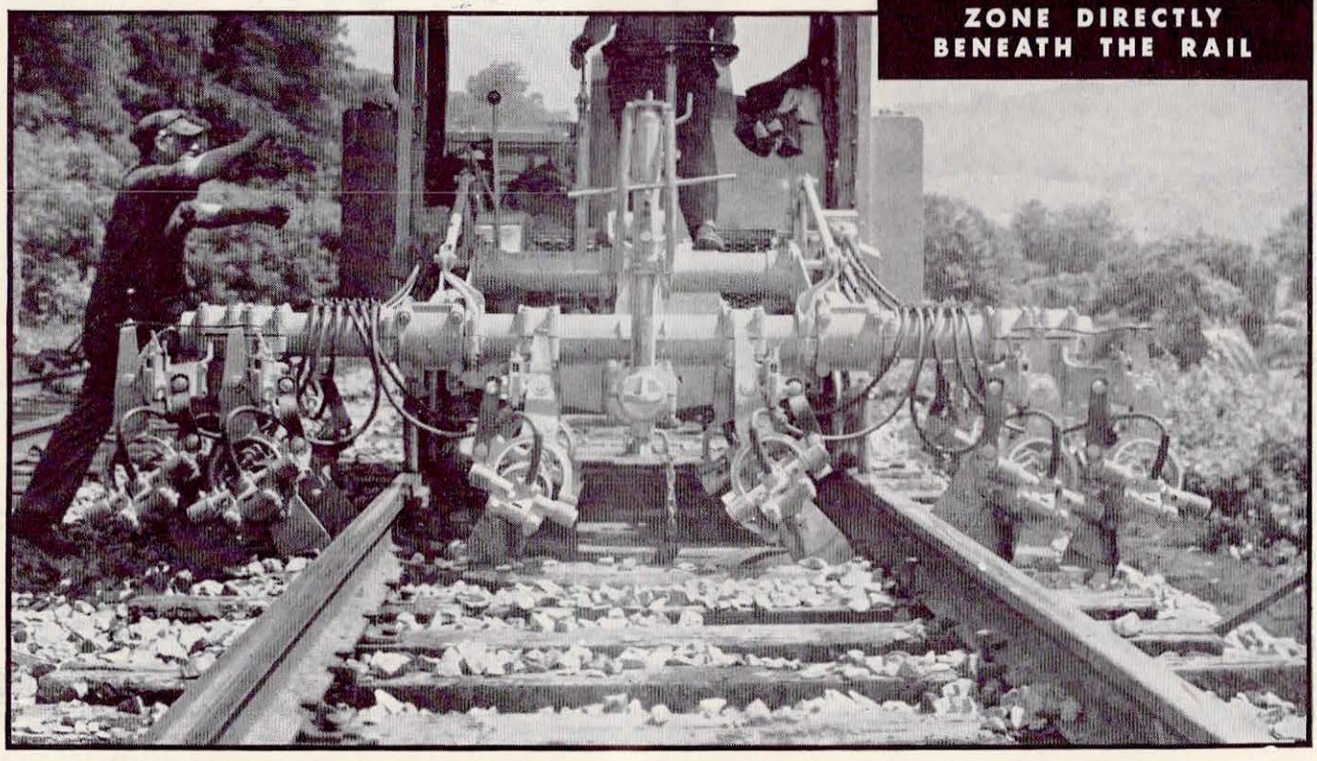

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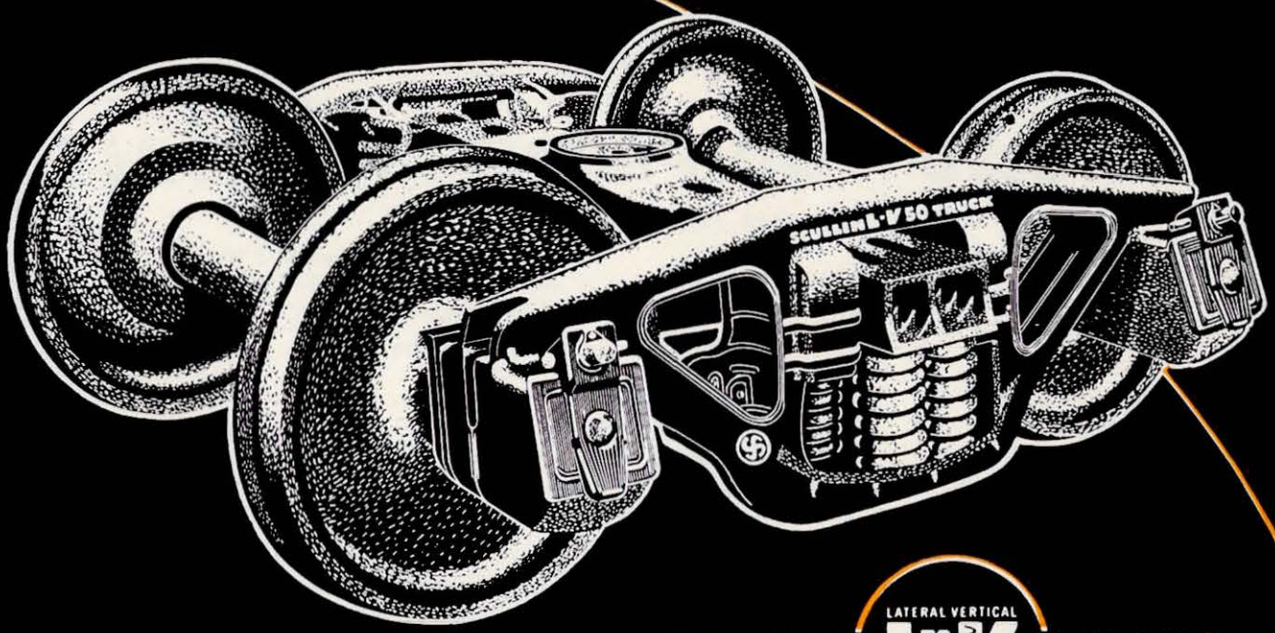

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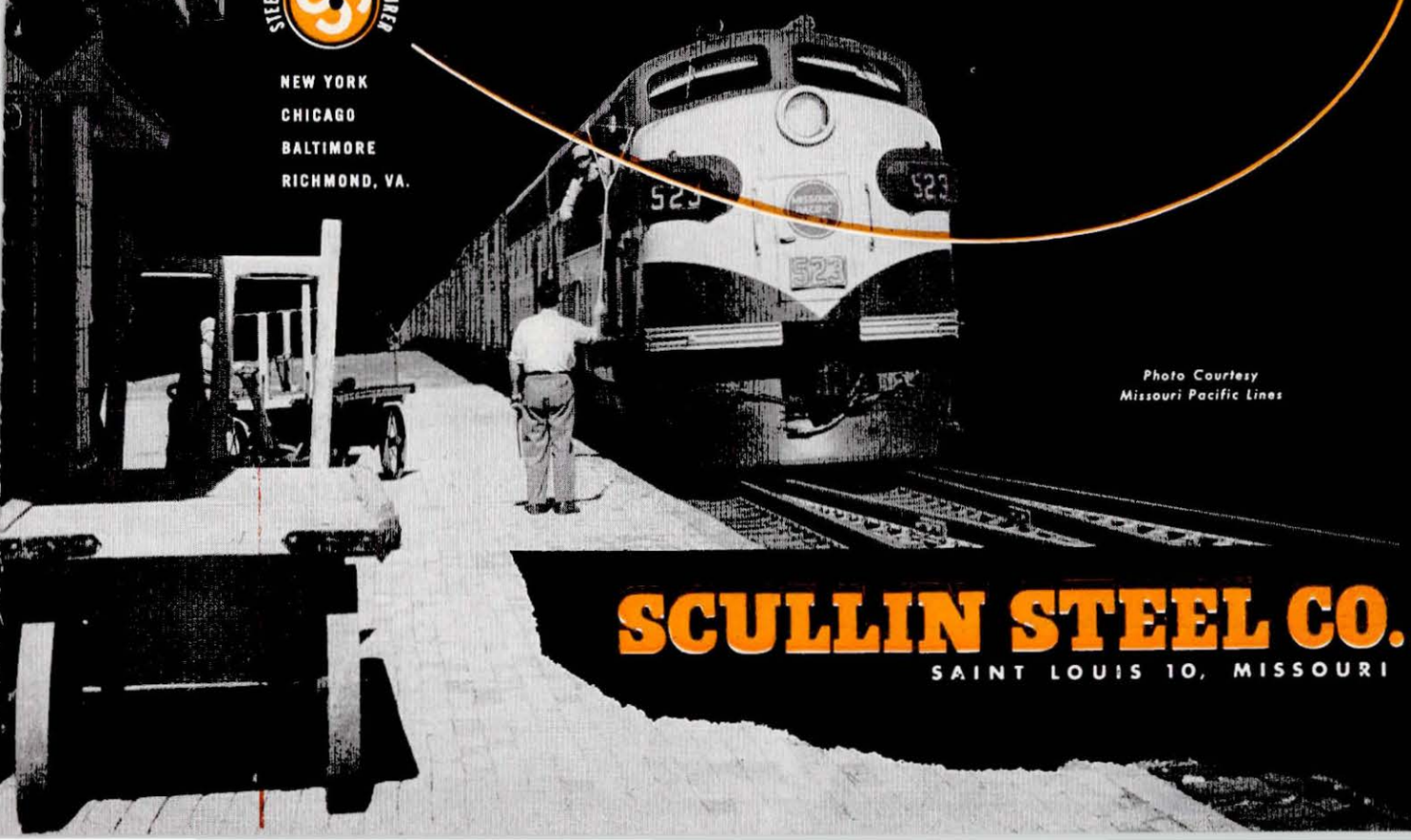

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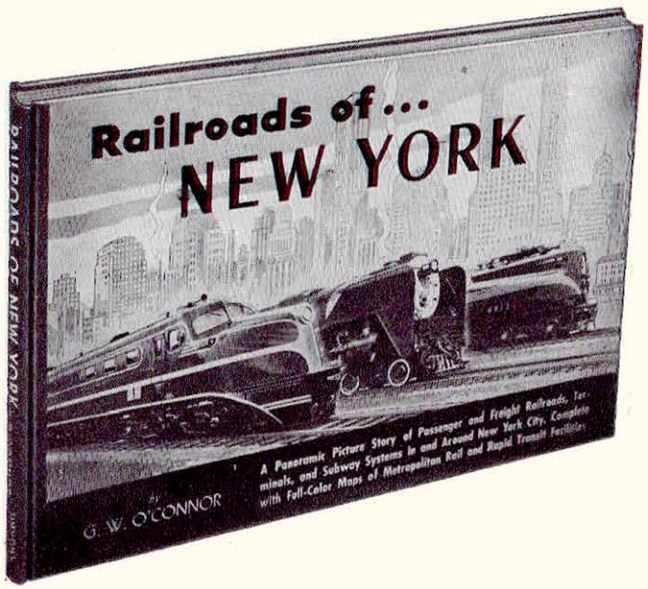
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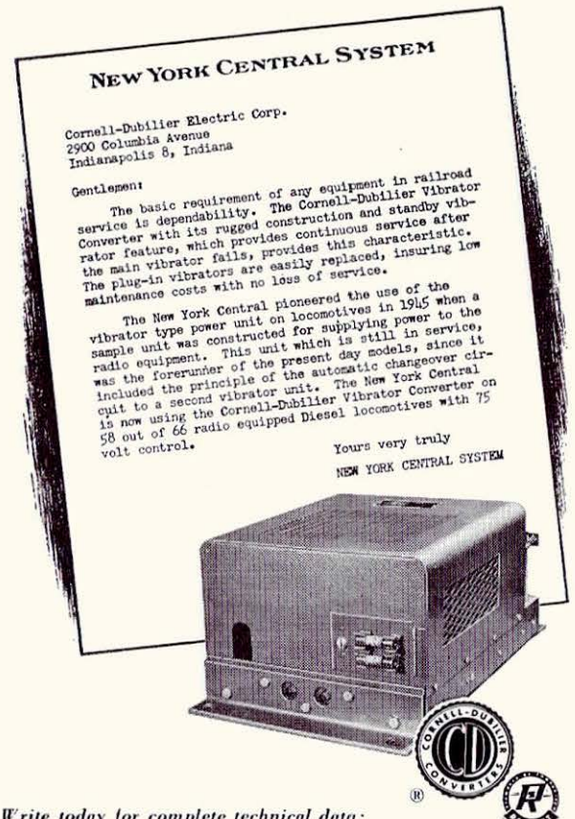

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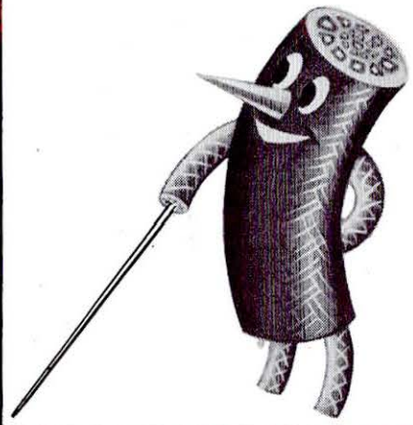

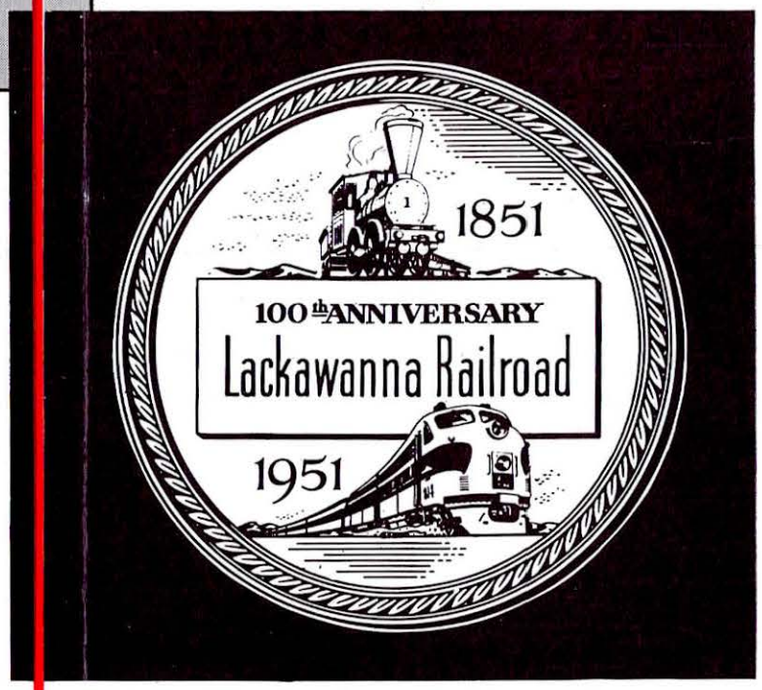

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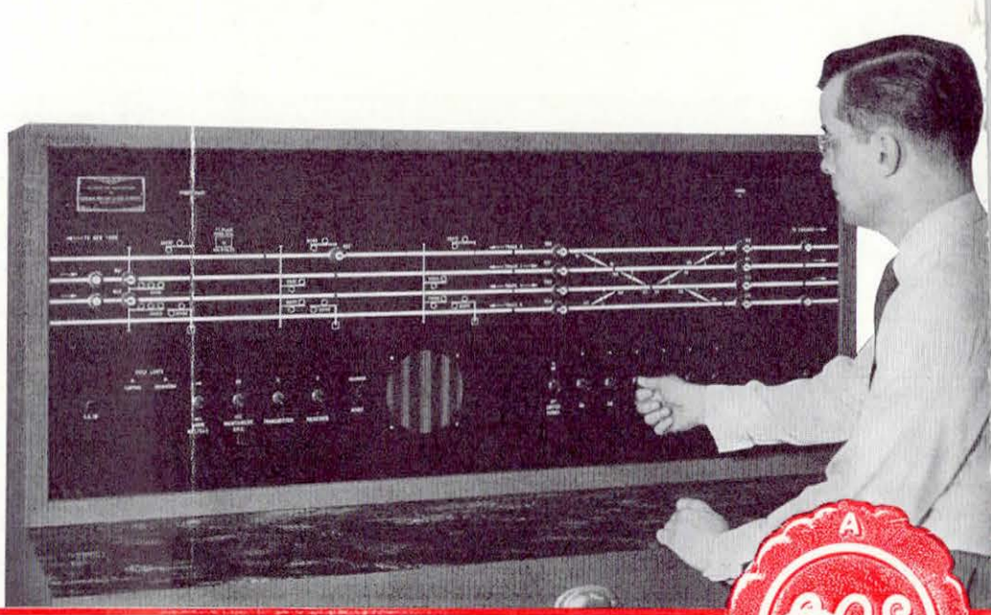

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